A world without war

Is it desirable? Is it feasible?

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In the title of my talk on a world without war, I have posed two questions: is it desirable? And, is it feasible? After the many millions of lives lost in the two World Wars of the last century, a world without war is assuredly most desirable. And it has been made all the more desirable by the events that have occurred since the end of the Second World War: not only is a war-free world desirable; it is now necessary, it is essential, if humankind is to survive.

I am referring to the development of the omnicidal weapons, first demonstrated in Hiroshima and Nagasaki. The destruction of these cities heralded a new age, the nuclear age, whose chief characteristic is that for the first time in the history of civilisation, humankind has acquired the technical means to destroy its own species and to accomplish this, deliberately or inadvertently, in a single action. In the nuclear age the human species has become an endangered species.

Actually, this threat did not loom large when work on the feasibility of the atom bomb began in England, soon after the outbreak of the Second World War. We had then a pretty good idea about the terrible destructive power of the bomb. We knew about the blast effect, which would destroy buildings over large distances; we knew about the heat wave, which would consume everything over still greater areas; we envisaged the radioactive fall-out, which would keep on killing people long after the military operations had ended. We even thought of the development of the hydrogen bomb, with its destructive power a thousand times greater. But in our discussions about the effects of these weapons we did not for one moment contemplate the ultimate catastrophe that their use might bring, namely the extinction of the human species. We did not envisage this because we knew that this would require the detonation of a very large number – perhaps a hundred thousand – of megaton bombs. Even in our most pessimistic scenarios we did not imagine that human society would be so stupid, or so mad, as to accumulate such obscenely huge arsenals for which we could see no purpose whatsoever. But human society was that insane. Within a few decades, arsenals of that magnitude were manufactured, and made ready for use by the two then superpowers, the United States and the Soviet Union. On several occasions, during the Cold War, we came

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perilously close to their actual use. I remember, in particular, one such occasion, the Cuban Missile Crisis forty-two years ago, when we were a hair's breadth away from total disaster, when the whole future of our civilisation hung on the decision of one man. Fortunately, Nikita Krushchev was a sane man, and he withdrew at the last moment. But we may not be so lucky next time. And next time is bound to happen if we continue with current policies.

Morality is at the very basis of the nuclear issue. Are we going to base our world on a culture of peace or on a culture of violence? Nuclear weapons are fundamentally immoral: their action is indiscriminate, affecting military as well as civilians, aggressors and innocents alike, killing people alive now and generations as yet unborn. And the consequence of their use might be to bring the human race to an end. All this makes nuclear weapons an unacceptable instrument for maintaining peace in the world. But this is exactly what we have been doing during, and after, the Cold War. We keep nuclear weapons as a deterrent, to prevent war by the threat of retaliation.

For the deterrent to be effective, the threat of retaliation must be real; we must convince the would-be aggressors that nuclear weapons would be used against them, otherwise the bluff would soon be called. George W. Bush, Vladimir Putin, or Tony Blair, must show convincingly that they have the kind of personality that would enable them to push the button and unleash an instrument of wholesale destruction. I find it terrifying to think that among the necessary qualifications for leadership is the readiness to commit an act of genocide, because this is what it amounts to in the final analysis. Furthermore, by acquiescing in this policy, not only the leaders but each of us figuratively keeps our finger on the button; each of us is taking part in a gamble in which the survival of human civilisation is at stake. We rest the security of the world on a balance of terror.

In the long run this is bound to erode the ethical basis of civilisation. I would not be surprised if evidence were found that the increase of violence observed in the world – from individual mugging to organised crime, to terrorist groups such as al-Qaeda – has some connection with the culture of violence under which we have lived during the Cold War years, and still do. I am particularly concerned about the effect on the young generation.

We all crave a world of peace, a world of equity. We all want to nurture in the young generation the much-heralded 'culture of peace'. But how can we talk about a culture of peace if that peace is predicated on the existence of weapons of mass destruction? How can we persuade the young generation to cast aside the culture of violence, when they know that it is on the threat of extreme violence that we rely for security?

I do not believe that the people of the world would accept a policy that is inherently immoral and likely to end in catastrophe. This was evident in the reaction to the destruction of the two Japanese cities, a reaction of revulsion, shared by the great majority of people in the world, including the United States. From the beginning, nuclear weapons were viewed with abhorrence; their use evoked an almost universal opposition to any further use of nuclear weapons. I believe this is still true today.

On the international arena this feeling was expressed in the very first resolution of the General Assembly of the United Nations. The Charter of the United Nations was adopted in June 1945, two months before Hiroshima, and thus no provision is made in the Charter for the nuclear age. But when the General Assembly met for the first time in January 1946, the first resolution adopted unanimously was to seek the elimination of atomic weapons and all other weapons of mass destruction.

However, from the very beginning, there were hawkish elements among the US leadership, who wanted to maintain a nuclear monopoly for the United States. General Leslie Groves was the overall head of the Manhattan Project, which developed the atom bomb during the Second World War. In October 1945, two months after Hiroshima, he outlined his views on US nuclear policy in a blunt statement:

> If we were truly realistic instead of idealistic, as we appear to be (*sic*), we would not permit any foreign power with which we are not firmly allied, and in which we do not have absolute confidence, to make or possess atomic weapons. If such a country started to make atomic weapons we would destroy its capacity to make them before it has progressed far enough to threaten us.

During the 59 years since that statement, US policy has undergone a number of changes, but the monopolistic doctrine outlined by General Groves has always been at its base, and now, under George W. Bush, it has become the actual US policy.

During the Cold War years the accumulation of the obscenely huge nuclear arsenals was justified under the doctrine known by the acronym MAD, mutual assured destruction; for each side to have enough weapons to destroy the other side even after an attack. With the end of the Cold War, and the collapse of the Soviet Union, this argument was no longer valid. Then was the time for the abolition of nuclear arsenals, to which the nuclear states are committed under the Non-Proliferation Treaty, signed and ratified by all of them. This, however, did not happen. The United States decided that nuclear arsenals, albeit of smaller size, are needed to prevent an attack with other weapons of mass destruction, such as chemical or biological weapons. And the Bush strategy, partly provoked by the terrorist attack of 9/11 went further still; it made nuclear weapons the tools with which to keep peace in the world.

In a reversal of previous doctrines, whereby nuclear weapons have been viewed as weapons of last resort, the Bush doctrine spells out a strategy which incorporates nuclear capability into conventional war planning. Nuclear weapons have now become a standard part of military strategy, to be used in a conflict just like any other high explosive. It is a major and dangerous shift in the whole rationale for nuclear weapons.

The implementation of this policy has already begun. The United States is developing a new nuclear warhead of low yield, but with a shape that would give it a very high penetrating power into concrete, a 'bunker-busting mini-nuke', as it has been named.

To give the military authorities confidence in the performance of the new weapon it will have to be tested. At present there is a treaty prohibiting the testing of nuclear weapons, the Comprehensive Test Ban Treaty, which the United States has signed but not ratified. If the US resumed testing, this would be a signal to other nuclear weapon states to do the same. China is almost certain to resume testing. After the US decision to develop ballistic missile defences, China would feel vulnerable, and is likely to attempt to reduce its vulnerability by a modernisation and build-up of its nuclear arsenal. Other states with nuclear weapons, such as India or Pakistan, may use the window of opportunity opened by the US to update their arsenals. The danger of a new nuclear arms race is real.

The situation has become even more dangerous under the new National Security Strategy introduced by President Bush. 'To forestall or prevent …hostile acts by our adversaries, the United States will, if necessary, act pre-emptively.'

The danger of this policy can hardly be over-emphasised. If the militarily mightiest country declares its readiness to carry out a pre-emptive use of nuclear weapons, others may soon follow.

Taiwan presents another potential scenario for a pre-emptive nuclear strike by the United States. Should the Taiwan authorities decide to declare independence, this would inevitably result in an attempted military invasion by mainland China. The US, which is committed to the defence of the integrity of Taiwan, may then opt for a pre-emptive strike.

Altogether, the aggressive policy of the United States, under the Bush administration, has created a precarious situation in world affairs, with a greatly increased danger of nuclear weapons being used in combat.

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Ten years after Hiroshima, when we began to appreciate the magnitude of the threat arising from the invention of nuclear weapons, a group of scientists, under the leadership of Bertrand Russell and Albert Einstein, tried to warn governments and the public. We issued a statement which has become known as the Russell-Einstein Manifesto. Let me read two sentences from it:

> We are speaking on this occasion, not as members of this or that nation, continent, or creed, but as human beings, members of the species Man, whose continued existence is in doubt.

And we went on:

> Here, then, is the problem which we present to you, stark and dreadful, and inescapable: Shall we put an end to the human race, or shall mankind renounce war?

I am now the sole survivor of the eleven signatories to the Russell-Einstein Manifesto, and as such, it is my duty – even a mission – to keep on posing this question to the public. With the end of the Cold War, and the cessation – for all practical purposes – of the ideological struggle that has polarised the world community, the nuclear threat has somewhat abated, but it has not gone away. The nuclear arsenals have been reduced, but enough warheads are still kept on hair-trigger alert to cause many millions of casualties if set off deliberately, or by a false alarm, or by some other accident. The danger will exist as long as nuclear weapons exist. Robert McNamara, the US Secretary of Defence, during the Cuban missile crisis, expressed this in a simple statement: '[T]he indefinite combination of nuclear weapons and human fallibility will lead to a nuclear exchange.'

But even if all the arsenals of weapons of mass destruction were eliminated, the security of humankind would not be assured. Nuclear weapons cannot be disinvented. We cannot erase from our memories the knowledge of how to make them. Should, sometime in the future, a serious conflict occur between the great powers of the day, it would not take long before nuclear arsenals were rebuilt, and we would find ourselves back in the Cold War situation.

Moreover, future advances in science may result in the invention of new means of mass destruction, perhaps even more powerful, perhaps more readily available. We already know

about advances in biological warfare whereby gene manipulation could change some pathogens into terrifyingly virulent agents. But entirely different mechanisms might be developed. Just as we cannot predict the outcome of scientific research, we cannot predict the destructive potential of its military applications. All we can say is that the danger is real.

The threat of the extinction of the human race hangs over our heads like the Sword of Damocles. We cannot allow the miraculous products of billions of years of evolution to come to an end. We are beholden to our ancestors, to all the previous generations, for bequeathing to us the enormous cultural riches that we enjoy. It is our sacred duty to pass them on to future generations. The continuation of the human species must be ensured. We owe an allegiance to humanity.

Reaching an agreement on the elimination of the known weapons of mass destruction is very important, because it would remove an immediate source of danger, but in the long run it will not suffice. To safeguard the future of humankind we have to eliminate not only the instruments for waging war, but war itself. As long as war is a recognised social institution, as long as conflicts are resolved by resort to military confrontation, the danger is that a war which begins over a local conflict – for example, over Kashmir – will escalate into a global war in which weapons of mass destruction are employed. The probability of this happening at any given time may be very small, but the consequences – should it happen – are so enormous that we must do everything in our power to eliminate the risk. In this nuclear age we can no longer tolerate war, any war. With the future of the human species at stake, this becomes a matter of concern to each of us. A war-free world has become a dire necessity, and its achievement must be made our steadfast objective.

This brings me to the second question in the title of my talk: is a war-free world feasible? To most people, the concept of a war-free world is a fanciful idea, a far-fetched, unrealisable vision. Even those who have come to accept the concept of a world without nuclear weapons still reject the notion of a world without national armaments as being unworkable.

Such attitudes are not surprising considering that, from the beginning, civilised society has been governed by the Roman dictum: *Si vis pacem para bellum* – if you want peace prepare for war. We have paid heed to this axiom despite the fact that throughout history preparation for war has brought, not peace, but war. With the onset of omnicidal weapons, the dictum seems to have changed to *Si vis pacem para armas* – if you want peace stay armed to the teeth. Accordingly, both sides accumulated huge nuclear arsenals in order to keep the peace, and this policy continues now with only one superpower.

The diabolical concept that in order to have peace we must prepare for war has been ingrained in us since the start of civilisation. So much so that we have begun to believe that waging war is part of our natural make up. We are told that we are biologically programmed for aggression: that war is in our genes.

As a scientist, I reject this thesis. I see no evidence that aggressiveness is genetically built into our behaviour. A group of experts, meeting in Seville under the auspices of UNESCO, concluded: 'It is scientifically incorrect to say that war or any other violent behaviour is genetically programmed into our human nature.' In the distant past, under the harsh conditions in which primitive humans lived, he often had to kill for survival, in competition for food or for a mate. Later on, when communities were formed, groups of people killed other groups of people for the same reason, and war became part of our culture. But now this is no longer necessary. Thanks largely to the advances in science and technology, there should be no need

for people to kill one another for survival. If properly managed and evenly distributed, there would be enough food and other life necessities for everybody, even with the huge increase in world population. The problem, of course, is that other factors (such as greed) come into play, with the result that the resources are not distributed equitably, and thus many people are still starving, many children are still dying from malnutrition. We have still much to do before the potential for removing the basic causes of war becomes a reality.

Nevertheless, we are moving towards a war-free world, even if we do not do it consciously. We are learning the lessons of history. In the two World Wars of the 20th century, France and Germany were mortal enemies. Citizens of these countries – and many others – were slaughtered by the millions. But now a war between France and Germany seems inconceivable. The same applies to the other members of the European Union. There are still many disputes between them over a variety of issues, but these are being settled by negotiations, by mutual give-and-take. The members of the European Union have learned to solve their problems by means other than military confrontation.

The same is beginning to take place in other continents. Military regimes are on the decline; more and more countries are becoming democracies. Despite the terrible bloodshed in recent years – the tribal genocide in Rwanda, the ethnic cleansing in Bosnia and Kosovo, and the murder of children in Beslan – the number of international wars is decreasing. We are gradually comprehending the futility of war, the utter waste in killing one another (although this does not seem to apply to terrorists, who show complete disregard for the sanctity of human life).

All the same, for the concept of a war-free world to become universally accepted, and consciously adopted by making war illegal, a process of education will be required at all levels: education for peace; education for world citizenship. We have to eradicate the culture in which we were brought up, the teaching that war is an inherent element of human society. We have to change the mind-set that seeks security for one's own nation in terms which spell insecurity to others.

We must replace the old Roman dictum by one essential for survival in the Third Millennium: *Si vis pacem para pacem* – if you want peace prepare for peace. This will require efforts in two directions: one – a new approach to security, in terms of global security; the other – developing and nurturing a new loyalty, loyalty to humankind.

With regard to world security, the main problem will be preventing conventional wars between nations, and the use of military arms by governments in settling internal disputes. This will require some limitation on the sovereignty of nations, and perhaps a modification of the Charter of the United Nations, which is based on the notion of sovereign nation-states.

Surrender of sovereignty is highly objectionable to most people, but some surrender of sovereign rights is going on all the time, brought about by the ever-increasing interdependence of nations in the modern world. Each international treaty we sign, every agreement on tariffs or other economic measures, is a surrender of sovereignty in the general interests of the world community. To this equation we must now add the protection of humankind.

It is a thorny problem but it has to be addressed. One of the main functions of the nation-state is to ensure the security of its citizens against threats from other states, which is taken to mean possessing the ability to wage war. A change will be called for in this respect: sovereignty will need to be separated from, and replaced by, autonomy. In particular, the right of the state to make war will have to be curtailed. This means no national military forces, and the only legal

coercive power on the world scale to be vested in some kind of police force responsible to a global authority. Some form of world governance seems a necessary outcome of the evolution of the United Nations.

As a way towards this we have to acquire a loyalty to humankind. As members of the human community, each of us has developed loyalties to the groups in which we live. In the course of history we have been gradually extending our loyalty to ever larger groups, from our family, to our neighbourhood, to our village, to our city, to our nation. I should emphasise that loyalty to a larger group is an addition to, not a replacement of, loyalties to the smaller groups. At present the largest group is our nation. This is where our loyalty ends now. I submit that the time has come for loyalty to another, still larger group: we have to develop and nurture loyalty to humanity.

The prospects for developing a loyalty to humankind are becoming brighter due to the growing interdependence between nations, an interdependence not only in the realm of economics, but also in social and cultural matters; an interdependence brought about by the advances in science and technology, in particular, the progress in communications technology; the fantastic advances in transportation, communication and information, that have occurred in the 20th century, and which I have witnessed in my own long life.

Of particular importance is the progress in information technology, in its various forms. The Internet technology enables us to chat with people wherever they are. It provides access to an infinite source of information, and the means to contribute our own knowledge or ideas. Information Technology has truly begun to convert the world into a global village: we know one another; we do business with one another; we depend on one another; we try to help one another. We are perforce becoming world citizens.

I welcome the fantastic advances in communication and information as a powerful factor against strife and war, because they provide new means for people to get to know one another and develop a sense of belonging to the whole of the world community. In the course of time, this will also reduce the economic gap between rich and poor nations.

Let me summarise. The applications of science and technology, both the negative and the positive, have created the necessity, and the opportunity to foster world citizenship. There is the need for a change in education that recognises our loyalty to humankind; the need to preserve the human species and the continuation of our civilisation.

In the course of many thousands of years, the human species has established a great civilisation; it has developed a rich and multifarious culture; it has accumulated enormous treasures in arts and literature; and it has created the magnificent edifice of science. It is indeed the supreme irony that the very intellectual achievements of humankind have provided the tools of self-destruction, in a social system ready to contemplate such destruction.

Surely, we must not allow this to happen. As human beings it is our paramount duty to preserve human life, to ensure the continuity of the human race.

A nuclear holocaust does not appear imminent. Having come close to it on several occasions during the Cold War, we are now somewhat more cautious. But war is still a recognised social institution, and every war carries with it the potential of escalation with fatal consequences for our species. In a world armed with weapons of mass destruction, the use of which might bring the whole of civilisation to an end, we cannot afford a polarised

community, with its inherent threat of military confrontations. In this scientific era, a global equitable community, to which we all belong as world citizens, has become a vital necessity.