

## Remember Your Humanity

For an address to members of the Movement for the Abolition of War, the title "Remember Your Humanity" seems highly appropriate. An end of war is a necessary requirement, if humanity is to be saved. But what do we mean by Humanity?

The Collins Dictionary contains five definitions under Humanity:

1. The human race
2. The quality of being human
3. Kindness or mercy
  
4. The study of literature, philosophy, and the arts
5. The study of Ancient Greek and Roman language, literature, etc..

The last two are rather narrow academic disciplines, and outside the scope of my talk. This leaves us with three definitions, and the question is which of these should be of concern to us?

My answer is that all three should be of great concern to us. Humanity under each of these definitions is threatened by war, though they refer to different types of war.

The first definition relates to the ultimate nuclear holocaust of the type we have escaped, by luck rather than by management, several times during the Cold War years. It is still a threat to the human race. Moreover, we have the dreadful prospect of new omnicidal weapons resulting from unrestrained advances in science.

With the ever-increasing interdependence between peoples and nations in the modern world, a military exchange that started over a local conflict, for example over Kashmir, may escalate, involve other nations, and lead to a world conflagration. The danger to the human race must therefore always be in our minds, when we campaign for the abolition of war. The speech which I gave a year ago at the Imperial War Museum on the desirability and feasibility of a war-free world was mainly concerned with this danger. But the threat to humanity under the second and third definitions are no less important.

Under the second definition, we discuss the quality of being human, a member of the species *homo sapiens*. This is threatened even by wars of a smaller scale than the one I have just described. It is now generally accepted that the human species is the outcome of the continuous, inexorable process of natural evolution that has led to the progression from primitive living organisms, such as bacteria, to plants, to animals. This progression was the result of random mutations in the DNA, influenced by environmental factors, and was extremely slow, of the order of millions of years. In animals, this has eventually led to the evolution of species with increasing intelligence, culminating in the human species in which the capacity for original thinking was acquired and grew at a much faster rate than in other animal species at a similar stage of development. The capacity for original thinking marks a very important phase in human evolution, the first time that Man was able to take charge of his own destiny.

The acquisition of the power of original thinking has brought in a new dimension to the process of natural evolution, the cultural evolution, which progresses at a much

faster rate, measured in terms of thousands of years rather than millions. In essence, it marks the onset of human civilization, which has led to the accumulation of enormous cultural riches, in poetry, literature, music, painting, sculpting and architecture. War is the antithesis of all this. Our cultural heritage is the usual victim of war. If you think that I am exaggerating, recollect what happened just a few months ago in Iraq during and after the military operations.

But usually it is the third aspect of humanity, kindness and mercy, that are the first victim of war. As soon as war breaks out, we seem to step back in history: ethical guidelines, our moral principles, go overboard; our civilized ways, so painfully acquired over centuries, are forgotten. The people in uniform are persuaded that killing is a virtue, when the target is labelled as an enemy. War destroys not only our bodies; it destroys our souls too. We become brutalized, demoralized, degenerate and depraved. If anyone thinks that I am exaggerating, please, remind yourselves what has happened in the very recent past; the cleansing in Kosovo, the massacre in Srebrenica, the carnage in Rwanda, and the tribal killings going on even at this moment in the Congo.

And I have left out the worst outrage that occurred during the Second World War: the holocaust.

I am speaking about this with strong feelings, because I am speaking from my own experience. At the risk of becoming too personal, I want to tell you briefly about this.

I am a member of an exclusive club, a sub-group of the world population, which is rapidly decreasing in number: I am referring to the survivors of the First World War, which began about 90 years ago. As a child my formative years were stamped by all the heinous attributes of war that I have just described: death and destruction, hunger and freezing, squalor and disease, cruelty and corruption, all in the full literal meaning of those words.

How did I survive with my sanity preserved? Paradoxically, by an escape from reality into a world of fiction. Thanks to a vivid imagination, and the avid reading of books of science fiction, I created for myself a fantasy world in which all the inventions and discoveries in science fiction became realized. With the unbound idealism of youth, I resolved that the great advances in science would be used to alleviate the lot of people, to lessen the hardships and drudgery of daily life.

Against tremendous odds, I managed to become a scientist myself, a member of the select group at the forefront of the quest for knowledge, a part of the cultural evolution that I mentioned earlier. I was fortunate to be a direct witness - and, to a small extent, to contribute - to the applications of science in the direction of my childhood dream.

Now, in the evening years of my life, and looking back at the dream of a child, I note with gratification that much of it has come true. Many of the fictional inventions and discoveries have become part of daily life. Science has indeed greatly contributed to raising standards of living, and improving the quality of life for the great majority of people.

To appreciate the magnitude of the change brought about by the applications of science, we should recall the dreadful conditions and the misery of existence for the

great majority of people in the past, some of this in the not so distant past, and for many still now.

I referred earlier to the enormous cultural riches accumulated throughout history.. The Seven Wonders of the World ; our glorious past, exhibited in museums of arts and crafts; in picture galleries; in libraries filled with volumes of literature and poetry. All this is undoubtedly part of civilization, but when thinking with pride about our grand heritage, we usually overlook its disagreeable aspects. When thinking about the magnificent edifices, like the Pyramids, we ignore the fact that they were mostly built by slave labour. When we think about the patrons of the arts, the maecenases of music and opera, we tend to forget that they owed their wealth to inhuman exploitation of the workers; to the toil of the peasants working the land from sunrise to sunset; to the miners labouring under unhealthy and hazardous conditions; to manual workers forced to grind from childhood to old age, on wages that did not provide basic sustenance. We are inclined to overlook the fact that the majority of the population were deprived of dignity, of basic civil rights, of access to education.

I cannot reconcile such inequities with humanity. For me, provision of basic needs and respect for fundamental human rights, a decent and dignified life for all citizens, are essential elements of civilization. I think of civilization in its traditional meaning of cultural values, but also of material values, applied to the whole population, not just to the privileged classes. My definition of civilization includes full education for everybody. And last but not least, it means a world community that has learned to live in peace, a community that has outlawed war.

We are still far from this objective, but we have made good progress, and science and technology deserve much credit for making this a reality. At the present time, in a climate of hostility to science, it is relevant to remind ourselves about the beneficial consequences of the applications of science.

Infectious diseases that used to kill so many in infancy and childhood are now a thing of the past in nearly all of the world. Infant mortality has decreased and the average lifespan has generally increased dramatically. Techniques in agriculture have improved enormously, making it possible - at least potentially - to provide food for the world population, despite its huge growth. New industrial technologies applied in factories and mines have largely removed the drudgery and mindlessness of labour, as well as reducing working hours and increasing safety standards. These technologies have also lessened the chores of day-to-day life, by providing better housing amenities, improved heating facilities, and durable fabrics for clothing.

In industrialized countries, the young generation do not realize - and the older people seem to have forgotten - how harsh life was in the early part of the 20th century. Again, I can speak from my own experience. I remember, when I was a boy, my mother spending all evenings on darning the socks of the children, in the dim illumination of candles. And the mornings she had to spend shopping for food, because without refrigeration there were no means to store it. Even later on in my life, the daily chores of bringing in the coal from the cellar, and trying to ignite it in the open fireplaces, occupied a great deal of time, apart from the hazards to health it entailed.

There was not much time, nor the facilities, for cultural pursuits. No radio, no television, no DVD players, no videos, no mobiles. These amenities, which we now

take for granted, are another of the benefits brought by the advances in science and technology, although there are occasions when we think that we would be better off without some of these inventions. Progress in communication and information has provided more and more people access to the great cultural achievements - to books, concerts, museums. The cost of printing has gone down so much that we are flooded with free magazines and pamphlets. Nowadays, nearly everybody can afford to buy a daily newspaper, whereas in the past it was a luxury for a Sunday. Education has made huge strides, with primary schooling almost universal, secondary school education becoming the norm, and a growing percentage of people going to universities.

I have presented all these benefits in a descriptive, anecdotal manner, but they are all backed up by quantitative data, based on careful statistical surveys. I took time to remind you of the beneficial effects of science, because they tend to be overshadowed by its harmful consequences. Because of these untoward consequences people frequently view science as immoral, wicked, dangerous, hurtful, unhealthy, something that we would be better off without. In my opinion this is a wrong approach to the problem. Without wishing in any way to play down the harmful effects of science - and I will describe these in a moment - I believe that it is from the further applications of the advances in science and technology that our salvation will come.

So let me turn to the other side of the coin, the harmful effects of science. In the highly complex structure of our society, it is an unfortunate but factual observation that any advance that bestows benefit almost invariably generates hardship. Every invention that brings comfort to some people results in discomfort to others. William Shakespeare put it succinctly in "All's Well that Ends Well": *The web of our life is of a mingled yarn, good and ill together*. Let me give a few examples.

The advances in transport technology have brought about massive movements of people. Thanks to cheap fares, we now have some 60,000 scheduled flights every day, carrying 6 million people across the continents, but this makes it easier for diseases to be transmitted across the world. The recent outbreak of a new virus in an obscure village in China, brought Toronto to a standstill. The profligate consumption of fuel in aircraft, as well as in cars, in some parts of the world, results in catastrophic storms and floods in other parts, through the climate warming effect.

The very high standard of living of the affluent people in the rich countries - combined with the rapid increase in world population - has led to the excessive consumption and depletion of material resources, such as water, mineral deposits, fossil fuels, productive land, fisheries, and forests, and is resulting in serious losses in biodiversity and impairment of the ecosystem.

While better health is one of the major benefits of science, the pollution of the atmosphere with various chemicals seems to have had an adverse effect on human health, as seen for example in the significant decrease in male fertility.

I could go on listing other calamities brought on indirectly by the application of science and technology, but all these fade into insignificance in comparison with the direct harmful effects resulting from the development of weapons of mass destruction.

Weapons of mass destruction are much in the news these days, mainly through our trying to find them where they do not exist. But we hear very little about the vast numbers held by the nuclear powers, which present a real threat.

In this connection, I should point out that putting chemical, biological, and nuclear weapons all into the same category of weapons of mass destruction is misleading. In terms of destructive power, there can hardly be any comparison between chemical weapons and nuclear ones. Biological weapons - at the present status of the technology - are also much less effective than nuclear, but they have a high potential for future awesome discoveries. Gene manipulation of viruses may result in the emergence of a new virulent variant of an existing virus, such as anthrax or smallpox, leading to an uncontrollable world epidemic. In his recent book "Our Final Century", Sir Martin Rees, the Astronomer Royal, assessed the various catastrophes that may befall mankind in the foreseeable future. His conclusion is that there is a 50/50 chance for civilization to survive until the end of this century; the danger of extinction coming not from a cosmological event, such as a collision with an asteroid, but - much more probably - from a man-made event, of the type I have just described.

A 50/50 chance is too high a risk to be accepted fatalistically: we cannot brook such odds, when it comes to the survival of humanity. The objective of our Movement - the Abolition of War - is a vital necessity.

Since I addressed you a year ago, the situation has deteriorated significantly in this respect. The anti-proliferation policy of the Bush Administration, which includes a pre-emptive attack with nuclear weapons against unfriendly regimes, has been pursued with vigour, with the added threat of France pursuing similar policies. It is very likely that, were it not for the setbacks encountered by the USA in post-war Iraq, Israeli bombers would have by now destroyed the Natanz uranium enrichment plant in Iran, and American missiles would have destroyed the Yongbyon reprocessing plant in North Korea.

Let me summarize the present situation. Nuclear weapons are the most horrific invention ever made in science. Their destructive power is millions of times greater than from ordinary explosives. On top of this, they leave a residue of radioactive poison that would cause death in generations yet to be born. Their large-scale use could bring our civilization to an end and threaten the very existence of the human race.

For these reasons nuclear weapons have been seen from the beginning as immoral tools of war. A taboo on their use has held for nearly 60 years, ever since the Nagasaki bomb. They were kept in the arsenals of some nations as a deterrent, not to be used, but only to prevent their use by an aggressor.

All this has now changed. The taboo has been broken. The aggressive use of nuclear weapons is now on the cards. But the most likely perpetrator is not a terrorist group of the al-Qaeda type; it is not one of the axis-of-evil states. The most likely perpetrator is the US government. Under the policies initiated by the George W. Bush Administration, nuclear weapons have been put into the category of ordinary high explosives, to be used in combat just like any other weapon. As such they will have to be retained in perpetuity. As I said they may even be used in a pre-emptive attack, such as we saw recently in Iraq, but they are of no use in preventing a terrorist attack.

The Western world was traumatized by the events of September 11, 2001. But the consequences would be far, far worse, if a nuclear weapon were used. The detonation of an atom bomb, of the type used in Hiroshima, would result not in 3,000 deaths, but in 300,000 deaths, at the least. The radioactive fall-out would necessitate the evacuation of the whole city. It is difficult to comprehend a catastrophe of such magnitude. Above a certain threshold, our senses become numb; a hundredfold increase in casualties, a thousand fold, a million fold, the difference ceases to have any meaning. But the grim reality is still there, and we must not be paralysed into inaction.

It is essential to realize that the nuclear policies of the Bush Administration are bound to increase, not decrease, the likelihood of such a catastrophe. Because, as long as nuclear weapons exist in national arsenals - and at least nine countries come into this category at the present time - there is always the danger of a terrorist group gaining access to a nuclear warhead, or to acquire the materials for assembling a bomb.

It stands to reason that the probability of this happening would be greatly reduced, if there were no nuclear weapons anywhere in the world.

This was the rationale that brought into existence the Nuclear Non-Proliferation Treaty, the NPT. It came into force 33 years ago, and by now has been ratified by 188 countries, that is 98 per cent of UN member states. The purpose of the NPT is not just to prevent further proliferation of nuclear weapons, but to eliminate them altogether. It is of the utmost importance that this point is generally understood and action taken accordingly. Under the terms of the Treaty, the countries which did not have nuclear weapons undertook not to acquire them, and those that already had nuclear arsenals committed themselves to their demolition. This commitment was reaffirmed unequivocally only recently.

Alas, the current US policies are in direct contradiction to this commitment. Indeed, as a consequence of these policies, new nuclear warheads are being developed, and will probably be tested, a move which is likely to trigger a new nuclear arms race.

There is very little recognition of this danger in the public domain. The radical change in posture - a complete reversal of doctrines held over the years - has been introduced by stealth, so that it escaped the attention of the general public. The general public is also not aware that in adopting this policy the US government is violating a treaty which it had signed and ratified. The US government is breaking international law.

What we have seen developing in recent months, was a brain washing of the general public. The Bush Administration seems to have managed to convince the public that only a part of the Non-Proliferation Treaty, the part that applies to the non-nuclear states, is valid, and that therefore states which violate it - as Iran stood accused of doing - must be punished for the transgression. The part concerning the obligation of the nuclear states is deliberately being blotted out. Let me cite two items which recently appeared in British national newspapers:

*"At a meeting of the IAEA today, the US will urge it to declare Tehran in breach of the Nuclear Non-Proliferation Treaty. **The treaty seeks to confine nuclear weapons to Russia, Britain, France, China and America.**"*

I have emphasized the second sentence because it displays the complete reversal of the purpose of the NPT.

The other newspaper - none other than The Times - reports similarly:

*"It [the NPT] was established to stop the spread of nuclear weapons beyond the original declared nuclear powers of the US, China, Russia, the UK and France."*

There is no mention of the obligation on the latter.

We are being reminded all the time how dangerous nuclear weapons are, and that they must not be allowed to fall into the hands of undesirable elements or rogue regimes. For example, one of the US policy documents states:

*"Weapons of mass destruction ... nuclear, biological, and chemical - in the possession of hostile states and terrorists, represent one of the greatest security challenges facing the United States."*

What we are *not* being told is that these weapons are just as dangerous in the possession of friendly nations, including - indeed, particularly, - the USA. We are not being reminded that - having comprehended these dangers - even the United States has undertaken to get rid of its own nuclear arsenal. We are facing here a basic issue in which ethical and legal aspects are intertwined. The use of nuclear weapons is seen by the great majority of people in the world as immoral, due to their indiscriminate nature and unprecedented destructive power. Their possession - and therefore likely use - is thus equally unacceptable, whether by "rogue" or "benevolent" regimes.

The elimination of nuclear weapons has been the declared aim of the United Nations from the beginning, and resolutions to this effect are passed, year after year, by large majorities of the General Assembly. These resolutions are ignored by the nuclear weapon states, as are all attempts to discuss the issue by the organ set up for this purpose, the Conference on Disarmament in Geneva.

There is a need to keep hammering home the point that America's stand on the NPT issue is iniquitous. It has signed and ratified an international treaty which commits it to get rid of nuclear weapons, yet it is pursuing a policy which demands the indefinite retention of these weapons.

We have to keep on highlighting the fundamental inconsistency in the US policies. We have to call on the USA to make a choice. Either it abides by the terms of the NPT and gets rid of its nuclear arsenals; or, if it wants to keep them, it must withdraw from the NPT. This would probably result in a massive increase in the number of nuclear weapon states, but is bound to happen in any case, if current policies are maintained. What can be done to compel the Bush Administration to move away from its dangerous doctrines. Any attempt to achieve this by persuasion, to change the policies through logical arguments, or by appealing to better instincts, would be hopeless and a complete waste of time.

The only way to influence Bush is through events that will threaten his chances of re-election just one year from now. Such events might be external, such as the problems now encountered in Iraq; these have already forced the Bush Administration to change its attitude to the United Nations - an institution which they instinctively despise and have been treating with contempt, but whose help they have now been

obliged to seek. Or, more importantly, through domestic events: pressure of public opinion within the United States. This too is related to the Iraqi issue through the extremely high cost of maintaining the military regime there, and which has already resulted in a greatly reduced public support for Bush. This trend should be given a big push by a deliberate campaign to arouse general awareness to the dangers implicit in the Bush policies.

A campaign with this objective is now building up in the United States, and the Pugwash Movement, in which I am involved, is taking an active part in it.

But such campaigns are also necessary in other countries, particularly in the UK. The Blair Government, while following US policies in general, has not adopted the policies implied in the US Nuclear Posture Review. Officially, the UK Government keeps presenting nuclear disarmament as its objective. We can therefore start from this base, by calling on Blair to put pressure on Bush to implement such a policy. Battered and humiliated as Bush's poodle in the Iraq debacle, Blair may seek a way to extricate himself from this bondage.

The prime aim of this campaign would be to eliminate nuclear weapons in fulfilment of the legal obligations under the Non-Proliferation Treaty. And the best occasion for this will be in two years time, in 2005, the 60th anniversary of Hiroshima and Nagasaki.

I have stressed the need to get rid of nuclear weapons because a nuclear war, or a pre-emptive nuclear strike, is the most likely threat in the near future. But we must not ignore the many other long-standing causes of strife and conflict, which may result in military confrontation, and potentially in a nuclear holocaust.

In a book, written by Robert Hinde and myself, which has just been published, we attempt to analyse the various causes of war. They include cultural factors, such as ethnicity and religion; economic factors, including globalization and poverty; and environmental factors. The latter come under the category of the negative aspects of the beneficial applications of science and technology, which I listed earlier, such as the pollution of the atmosphere with harmful products, often arising from excessive consumption and wastage of natural resources.

Conflicts over access to natural resources have been a recurring feature of the past, resulting in colonial wars. They have been exacerbated in recent times by the exponential rise in world populations, most of it in poor African states, but also by the uneven access to the benefits of the advances in science and technology.

Many people see these developments as a portent of a catastrophe to civilization. They claim that the widening gap between nations will become a cause of war through the increasing polarization of society, with the upper class gaining more benefits from access to new technologies, and the lower class falling further and further behind.

I do not subscribe to this pessimistic prognostication. I welcome the future advances in communication and interaction 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. I am basing my optimism on the observation mentioned earlier: the steady improvement in education all over the world. This is a fact. We are getting better educated, and a better educated public is

much less likely to accept the propaganda of mistrust and hatred which unscrupulous leaders use to incite people to war. Education is an irreversible process and can go only in one direction; towards a better world. The main danger is that in the meantime, until the process of education is complete, the pursuit of policies such as those of the Bush Administration, operating towards greater polarization of society, will bring us to catastrophe.

This is why we need a massive public awareness campaign of the type I have advocated. We must do our utmost to see us through this dangerous period.

I mentioned before that the year 2005 will be the 60th anniversary of Hiroshima. It will also be the 50th anniversary of the Russell-Einstein Manifesto, and therefore the occasion to remind the public of the stark, dreadful, and inescapable question which it posed: *"Shall we put an end to the human race or shall mankind renounce war?"*

This is a rhetorical question, because there is only one answer to it. Humanity must continue, but it must continue in all its aspects. And this is what I was trying to convey in the final paragraph of my Nobel Lecture:

*"The quest for a war-free world has a basic purpose: survival. But if in the process we learn how to achieve it by love rather than by fear, by kindness rather than by compulsion; if in the process we learn to combine the essential with the enjoyable, the expedient with the benevolent, the practical with the beautiful, this will be an extra incentive to embark on this great task.*

***Above all, remember your humanity."***

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**Professor Sir Joseph Rotblat**

**1 November 2003**