

EDITOR'S NOTE: This issue of the *SPS Observer* features several articles related to science ethics, but it is not the first foray into this arena for SPS. The Society of Physics Students has initiated a web page with some science ethics resources at http://www.spsnational.org/info/sigma_ethics.htm; it includes a set of 10 ethics recommendations developed at the 2004 Congress of the physics honor society, Sigma Pi Sigma. If you would like to share comments or resources regarding science ethics, please contact us by e-mail at sps@aip.org.

SIR JOSEPH ROTBLAT: A LEGACY OF PEACE (1908 - 2005)

— by David Krieger



Sir Joseph Rotblat (left) receives the Nuclear Age Peace Foundation's Lifetime Achievement Award for his indefatigable work to "Remember Your Humanity."

-Photo courtesy of David Krieger.

Joseph Rotblat was one of the great men of the 20th century.

He was a man of science and peace. Born in Warsaw, Poland, in 1908, he was one of those rare individuals who, like Rosa Parks or Nelson Mandela, comes to an intersection with history and courageously forges a new path. In Joseph's case, the intersection with history arrived in 1944 while he was working on the Manhattan Project, the US project to develop an atomic bomb.

Joseph had worked as a scientist toward the creation of an atomic weapon, first in the UK at the University of Liverpool and then at Los Alamos, New Mexico. When he learned in late 1944 that Germany would not succeed in developing an atomic bomb, he believed there was no longer reason to continue work on creating a US bomb. For him, there was only one reason to create an atomic weapon, and that was to deter the German use of such a weapon during World War II. If the Germans would not have an atomic weapon, then there was no reason for the Allies to have one. Joseph was the only scientist to leave the Manhattan Project on moral grounds.

He was the last living signer of the 1955 Russell-Einstein Manifesto, one of the great documents of the 20th century, and he often quoted its final passage: "We appeal, as human beings, to human beings: Remember your humanity and forget the rest. If you can do so, the way lies open for a new paradise; if you cannot, there lies before you the risk of universal death."

THE RUSSELL-EINSTEIN MANIFESTO

Issued at a press conference in London, England, on 9 July 1955, and sent to leaders of nations that possessed nuclear weapons, or were capable of possessing them at that time. Today, over fifty years after the "Russell-Einstein Manifesto" was signed and delivered, it is imperative to reflect that its warnings still hold.

PREAMBLE (by Russell alone)

The statement which has been signed by some of the most eminent scientific authorities in different parts of the world deals with the perils of a nuclear war.

It makes clear that neither side can hope for victory in such a war, and that there is a very real danger of the extermination of the human race by dust and rain from radioactive clouds.

It suggests that neither the public nor the governments of the world are adequately aware of the danger.

It points out that an agreed prohibition of nuclear weapons, while it might be useful in lessening tension, would not afford a solution, since such weapons would certainly be manufactured and used in a great war in spite of previous agreements to the contrary.

The only hope for mankind is the avoidance of war. To call for a way of thinking which shall make such avoidance possible is the purpose of this statement.

The first move came as a collaboration between Einstein and myself. Einstein's signature was given in the last weeks of his life.

Since his death I have approached men of scientific competence both in the East and in the West, for political disagreements should not influence men of science in estimating what is probable, but some of those approached have not yet replied.

I am bringing the warning pronounced by the signatories to the notice of all the powerful governments of the world in the earnest hope that they may agree to allow their citizens to survive.

STATEMENT

In the tragic situation which confronts humanity, we feel that scientists should assemble in conference to appraise the perils that have arisen as a result of the development of weapons of mass destruction, and to discuss a resolution in the spirit of the appended draft.

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. The world is full of conflicts; and, overshadowing all minor conflicts, the titanic struggle between Communism and anti-Communism.

Almost everybody who is politically conscious has strong feelings about one or more of these issues; but we want you, if you can, to set aside such feelings and consider yourselves only as members of a biological species which has had a remarkable history, and whose disappearance none of us can desire.

We shall try to say no single word which should appeal to one group rather than to another. All, equally, are in peril, and, if the peril is understood, there is hope that they may collectively avert it.

We have to learn to think in a new way. We have to learn to ask ourselves, not what steps can be taken to give military victory to whatever group we prefer, for there are no longer such steps; the question we have to ask ourselves is: what steps can be taken to prevent a military contest of which the issue must be disastrous to all parties?

The general public, and even many men in positions of authority, have not realized what would be involved in a war with nuclear bombs. The general public still thinks in terms of the obliteration of cities. It is understood that the new bombs are more powerful than the old, and that, while one A-bomb could obliterate Hiroshima, one H-bomb could obliterate the largest cities, such as London, New York, or Moscow.

No doubt in an H-bomb war great cities would be obliterated. But this is one of the minor disasters that would have to be faced. If everybody in London, New York, and Moscow were exterminated, the world might, in the course of a few centuries, recover from the blow. But we now know, especially since the Bikini test, that nuclear bombs can gradually spread destruction over a very much wider area than had been supposed.

It is stated on very good authority that a bomb can now be manufactured which will be 2,500 times as powerful as that which destroyed Hiroshima. Such a bomb, if exploded near the ground or under water, sends radio-active particles into the upper air. They sink gradually and reach the surface of the earth in the form of a deadly dust or rain. It was this dust which infected the Japanese fishermen and their catch of fish. No one knows how widely such lethal radio-active particles might be diffused, but the best authorities are unanimous in saying that a war with H-bombs might possibly put an end to the human race. It is feared that if many H-bombs are used there will be universal death, sudden only for a minority, but for the majority a slow torture of disease and disintegration.

Many warnings have been uttered by eminent men of science and by authorities in military strategy. None of them will say that the worst results are certain. What they do say is that these results are possible, and no one can be sure that they will not be realized. We have not yet found that the views of experts on this question depend in any degree upon their politics or prejudices. They depend only, so far as our researches have revealed, upon the extent of the particular expert's knowledge. We have found that the men who know most are the most gloomy.

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? People will not face this alternative because it is so difficult to abolish war.

The abolition of war will demand distasteful limitations of national sovereignty. But what perhaps impedes understanding of the situation more than anything else is that the term "mankind" feels vague and abstract. People scarcely realize in imagination that the danger is to themselves and their children and their grandchildren, and not only to a dimly apprehended humanity. They can scarcely bring themselves to grasp that they, individually, and those whom they love are in imminent danger of perishing agonizingly. And so they hope that perhaps war may be allowed to continue provided modern weapons are prohibited.

This hope is illusory. Whatever agreements not to use H-bombs had been reached in time of peace, they would no longer be considered binding in time of war, and both sides would set to work to manufacture H-bombs as soon as war broke out, for, if one side manufactured the bombs and the other did not, the side that manufactured them would inevitably be victorious.

Although an agreement to renounce nuclear weapons as part of a general reduction of armaments would not afford an ultimate solution, it would serve certain important purposes. First, any agreement between East and West is to the good in so far as it tends to diminish tension. Second, the abolition of thermo-nuclear weapons, if each side believed that the other had carried it out sincerely, would lessen the fear of a sudden attack in the style of Pearl Harbour, which at present keeps both sides in a state of nervous apprehension. We should, therefore, welcome such an agreement though only as a first step.

Most of us are not neutral in feeling, but, as human beings, we have to remember that, if the issues between East and West are to be decided in any manner that can give any possible satisfaction to anybody, whether Communist or anti-Communist, whether Asian or European or American, whether White or Black, then these issues must not be decided by war. We should wish this to be understood, both in the East and in the West.

There lies before us, if we choose, continual progress in happiness, knowledge, and wisdom. Shall we, instead, choose death, because we cannot forget our quarrels? We appeal as human beings to human beings: Remember your humanity, and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, there lies before you the risk of universal death.

RESOLUTION

We invite this Congress, and through it the scientists of the world and the general public, to subscribe to the following resolution:

“In view of the fact that in any future world war nuclear weapons will certainly be employed, and that such weapons threaten the continued existence of mankind, we urge the governments of the world to realize, and to acknowledge publicly, that their purpose cannot be furthered by a world war, and we urge them, consequently, to find peaceful means for the settlement of all matters of dispute between them.”

Max Born
Percy W. Bridgman
Albert Einstein
Leopold Infeld
Frederic Joliot-Curie
Herman J. Muller
Linus Pauling
Cecil F. Powell
Joseph Rotblat
Bertrand Russell
Hideki Yukawa

