(Address given by the Rev. Theodore M. Hesburgh, C.S.C.
President Emeritus, University of Notre Dame,
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I am happy to be with you here tonight under the aegis of Hans J. Morgenthau. Over forty years ago, Professor Morganthau was a kind of guardian angel to our fledgling Committee on International Relations at the University of Notre Dame. He was very supportive of Stephen Kertesz and Waldemar Gurian, two of those wonderful European scholars who came to Notre Dame after the war to broaden our concerns worldwide. Morganthau not only contributed to their journal, The Review of Politics, which is celebrating its fiftieth anniversary this year, but was heard to say that it was the only such journal that he invariably read from cover to cover.

I must also add that in researching the Morganthau articles and the chapters he provided for two books that Kertesz edited on International Diplomacy (there were sixty volumes in this series), I also discovered that our colleague, Ken Thompson, himself contributed no less than fifteen articles to The Review, as well as books to the series.

Next year, we will be dedicating a new Center for International Studies at Notre Dame, a building that will make our many international concerns visible, right at the entrance to the campus. The new building will rest on a strong foundation to which Professor Morganthau and Ken Thompson have contributed in no small measure. We are most grateful to them, as well as to Joan Kroc who makes much of this possible today through her magnificent contributions.

I would like to consider with you tonight what I believe to be the greatest moral problem of our time: the nuclear dilemma. It is a dilemma now almost forty-five years old. The danger is that we have lived with it that long without being annihilated. Although the beast has continued to grow through those years and has become infinitely more dangerous, we may become accustomed to having it around, but thus far not fatal to humanity.

Most of us were around when the beast was born. I am sure we have forgotten a prescient editorial that appeared in Time Magazine within days of that sober event, August 20, 1945. It was entitled simply, The Bomb.

I have tried several times to condense the editorial, but have finally decided that you should hear it all.

> "The greatest and most terrible of wars ended, this week, in the echoes of an enormous event -- an event so much more enormous that, relative to it, the war itself shrank to minor significance. The knowledge of victory was as charged with sorrow and doubt as with joy and gratitude. More fearful responsibilities, more crucial liabilities rested on the victors even than on the vanquished.
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> "In what they said and did, men were still, as in the aftershock of a great wound, bemused and only semi-articulate, whether they were soldiers or scientists, or great statesmen, or the simplest of men. But in the dark depths of their minds and hearts, huge forms moved and silently arrayed themselves: Titans, arranging out of

the chaos an age in which victory was already only the shout of a child in the street.

"With the controlled splitting of the atom, humanity, already profoundly perplexed and disunified, was brought inescapably into a new age in which all thoughts and things were split -- and far from controlled. As most men realized, the first atomic bomb was a merely pregnant threat, a merely infinitestimal promise.

"All thoughts and things were split. The sudden achievement of victory was a mercy, to the Japanese no less than to the United Nations, but mercy born of a ruthless force beyond anything in human chronicle. The race had been won, the weapon had been used by those on whom civilization could best hope to depend; but the demonstration of power against living creatures instead of dead matter created a bottomless wound in the living conscience of the race. The rational mind had won the most Promethan of its conquests over nature, but had put into the hands of common man the fire and force of the sun itself.

"Was man equal to the challenge? In an instant, without warning, the present had become the unthinkable future. Was there hope in that future, and if so, where did hope lie?

"Even as men saluted the greatest and most grimly Pyrrhic of victories in all the gratitude and good

spirit they could muster, they recognized that the discovery which had done most to end the worst of wars might also, quite conceivably, end all wars -- if only man could learn its control and use.

"The promise of good and of evil bordered alike on the infinite -- with this further, terrible split in the fact: that upon a people already so nearly drowned in materialism even in peacetime, the good uses of this power might easily bring disaster as prodigious as the evil. The bomb rendered all decisions made so far, at Yalta and at Potsdam, mere trivial dams across tributary rivulets. When the bomb split open the universe and revealed the prospect of the infinitely extraordinary, it also revealed the oldest, simplest, commonest, most neglected and most important of facts: that each man is eternally and above all else responsible for his own soul, and, in the terrible words of the Psalmist, that no man may deliver his brother, nor make agreement unto God for him.

"Man's fate has forever been shaped between the hands of reason and spirit, now in collaboration, again in conflict. Now reason and spirit meet on final ground. If either or anything is to survive, they must find a way to create an indissoluble partnership."

I have wondered what the author of that editorial would say today, forty-four years later. We are still facing this greatest moral challenge of all time: What do we do about this monster that we have created, nourished, and developed to a point where its nefarious power today is literally a million times greater than in 1945. We all know that we are the first generation of humans since Genesis who literally can totally destroy the human species and make our beautiful planet uninhabitable.

It is difficult to express all of this in words. E. L Doctorow, whose craft is words, tried to express it in Moscow recently when speaking to the International Physicians for the Prevention of Nuclear War. His address was also entitled, The Bomb.

> "The bomb transmutes matter into energy. It burns as the sun burns. It turns people into light. It turns their cities into radiant ashpits. It disintegrates the ordinary miracles of the diurnal world and sentient life in a million beautiful versions, every moving shuddering birth, every egg wet baby, everything that walks, gallops, flies, hops, swims, or opens in the morning, every pulse in the organic earthbody, is forever stifled. Life is profoundly and eternally humiliated. All cries of ecstasy, all liturgy, the things we mean to say ..... and this is called nuclear capability.

..... Therefore, I offer for your consideration
the idea that The Bomb is, before anything else,
a staggering impiety, a profound theological
offense."

What could be a greater theological offense than to throw God's beautiful creation back in His face. This must be the greatest blasphemy of all. How could we not see this in the depths of our consciences?

Still back in 1945, Albert Einstein, aghast at the results of his creative work in the holocaust of Hiroshima and Nagasaki, prophesized briefly and preciently:

"The unleashed power of the atom has changed
everything except our mode of thinking and
we thus drift towards unparalleled disaster."

We had our share of prophetic voices in the years since 1945, but somehow we continued to drift. Even President Eisenhower, the greatest General in World War II, in 1953 warned us of the senseless drift towards unparalleled disaster:

"Every gun that is made, every warship launched,
every rocket fired signifies, in the final sense,
a theft from those who hunger and are not fed,
those who are cold and are not clothed. This
world in arms is not spending money alone. It is
spending the sweat of its laborers, the genius of
its scientists, the hopes of its children ....

This is not a way of life at all in any true sense. Under the cloud of threatening war, it is humanity hanging from a cross of iron."

Many of us warmed to this rhetoric, some of us spoke whenever we could of the growing overhang of the nuclear mushroom cloud, but the nuclear arms race continued apace, growing like a malignant cancer, especially here and in the Soviet Union. We did it because they did it; they did it because we did it. As one Soviet official told me, your hawks nourish our hawks and our hawks feed your hawks. The doves (a kind of pejorative word) do not really count.

The nuclear arsenal grew in numbers, megatonnage, new and more accurate systems of delivery on land, sea, and sky, and now in outer space. When most of these earlier concerns were voiced, we had few weapons, delivery systems that required ten hours or more by slow moving bombers. Now we have shortened the fuse to such a few minutes that we face the further abysmal prospect of handing the future of the human race over to mindless, amoral, and let it be said, often faulty computers. Academician Velikhov once told me that what he feared most was not us, but our computers, and then added, "and ours are worse."

In all honesty is should be added, as it often is not, that we introduced most of these new systems first, with the Soviets quickly following suit. For example, we had the atom bomb in 1945, they in 1949; we the intercontinental bomber in 1951, they in 1955;

we the jet bomber in 1951, they in 1954; we the H-bomb in 1952, they in 1953; they beat us one year to the Intercontinental Ballistic Missile in 1957.

We introduced photoconnaissance from satellites in 1960, they in 1962. We initiated submarine launched missiles in 1960, they in 1964. We launched the solid fuel ICBM in 1962, they in 1966.

They beat us to the anti-ballistic missile, albeit a crude one in 1966, ours came in 1974. We were first to initiate multiple re-entry vehicles in 1970, they did likewise in 1975. These are the dates for testing and/or deployment. Obviously, each escalation was quickly followed and the arms race accelerated at each new step. (Towards a New Security, V.C.S., 1985, p. 22)

There were some more strong warnings while all this was happening. The Russell-Einstein manifesto in 1955 that gave birth to the Pugwash Conferences on Science and World Affairs is worth citing:

"A war with H-bombs might quite possibly put an end to the human race." The manifesto concluded with another strong statement regarding our choice between cosmic good and evil: "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."

There were also during this period many religious appeals to nuclear morality and sanity, including some of my own, but they went largely unheard and unheeded. About a quarter of our scientists and engineers worldwide were engaged in the macabre arms race. What caught the headlines were the war games spokesmen.

Fred Kaplan, in his book, The Wizards of Armageddon, portrays the efforts of the intellectuals and scientists who have elaborated American nuclear policy while rotating between the Departments of Defense and State and the national think tanks on the East and West Coasts. After almost 400 pages of record, he concludes:

> "They performed their calculations and spoke their strange and esoteric tongues because to do otherwise would be to recognize all too clearly and constantly, the ghastliness of their contemplations. They contrived their options because without them, the bomb would appear too starkly as the thing that they had tried to prevent it from being, but that ultimately it would become if it ever were used -- a device of sheer mayhem, a weapon whose cataclismic powers no one had the faintest idea of how to control. The nuclear strategists had come to impose order -- but in the end, only chaos still prevailed." (The Wizards of Armageddon, Simon and Shuster, 1983, pp. 390-1)

Somehow in the early 1980's, a wider moral consciousness began to emerge here in America and around the world. It almost

seemed like a case of spontaneous combustion, a bit late, but welcome. I recall walking across the campus following a lecture on what would happen if a one megaton bomb exploded over South Bend. I looked around at the beautiful Fall scene, students hurrying to and from class, the trees resplendent, peace and beauty and vitality everywhere I looked. Then the reality of the nuclear threat: whether by malice or accident, suddenly in a blinding flash of light, all of this gone, everything gone, everywhere. It was like a religious conversion. Everything I had been working on -- human rights, economic and social development in the Third World, immigration and refugees, higher education worldwide -- all irrelevant in a flash. No human beings, no human problems. Only a void. I decided then and there to put highest priority on the primordial problem. More of that later.

I suspect that this happened to many others at the same time in the early eighties. The physicians organized worldwide some 150,000 under Dr. Bernard Lown of Harvard and Dr. Chazov, now Minister of Health for Russia (IPPNW). This led to an unusual US-USSR Nobel Prize for Peace. The lawyers and businessmen organized against nuclear war, even Mothers Embracing Nuclear Disarmament (MEND). Dozens of peace groups, local, national, and international, either appeared anew or were revitalized.

The International Council of Scientific Unions, the National Academy of Sciences, and the American Association for the Advancement of Science all produced strong resolutions

calling nuclear war "an unprecedented threat to humanity" that must be avoided at all costs. In addition to the effects of blast, heat, and radiation, a new horror, Nuclear Winter, was introduced.

Dr. Bernard Lown said it best, speaking of "The Ultimate Epidemic."

> "We can and must instill a sense of moral revulsion to nuclear weaponry and the Orwellian term, 'deterrence' which is but a sanitized word of indiscriminate and colossal mass murder. Our goal should be the widest conditioning of an anti-nuclear instinct as potent as hunger. Moral arousal, I believe, will help tilt the perilously balanced scale in world affairs towards survival.
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> " President Eisenhower predicted that there will come a day when the people will generate such a mighty popular groundswell for peace that governments will be forced to get out of their way. Such a day is no longer remote for it is beckoned by the unleashing of the deepest forces embedded in humankind when threatened by extinction." (IPPNW Report, Vol. I, No. 2, p. 15)

While all this was happening, what were the two super power governments doing? Posturing mainly. If you want a detailed report on what was happening here during President Reagan's first term, read Strobe Talbott's, Deadly Gambits (Alfred Knopf, New York, 1984). The most important human problem of all time

was not being addressed constructively by the President, not by the Secretaries of State and Defense, but by their Under Secretaries, both hawks, but even more determined to checkmate each other in a personal vendetta. Thank God, the United States managed to survive Richard Burt vs. Richard Perle. The USSR officialdom was doing no better with rapid turnover of their gerontological leadership, generally floundering. Fortunately for us, the summits of Geneva, Reykjavik, Washington, and Moscow lay ahead. Then would come the first slight turn in the roads towards "unparalleled disaster." But for the moment, despite all the clamor for peace, we were in deep trouble.

Leslie Gelb put it well in a March 4, 1984, article in the New York Times:

> "There seems to be a habit of mind developing among Soviet and American officials that the problem cannot be solved, that technology cannot be checked, a combination of resignation and complacency. They have gotten used to both the competition and the nuclear peace. Mankind may not survive on that alone."

As all of this was going on, the religious groups, Catholic, Protestant, and Jewish, burst into new life and vital activity -- often to the consternation of the government and sometimes to the dismay of the more conservative members of the flock, the "my country right or wrong" variety.

I can best report on the activities of the American Catholic hierarchy who spent several years producing what is, in my judgment, their best pastoral letter: The Challenge of Peace, God's Promise and Our Response. (U.S.C.C., Washington, D.C., 1983) As the Chairman of the Drafting Committee, Joseph Cardinal Bernardin, observed in a talk at Notre Dame:

> "Today, the stakes involved in the nuclear issue make it a moral compelling urgency. The Church must be involved in the process of protecting the world and its people from the spector of nuclear destruction. Silence in this instance would be a betrayal of its mission .... the premise of the letter is that nuclear weapons and nuclear strategy constitute a qualitatively new moral problem." In scientific words, the nuclear threat is a quantum leap in the age-old contest of good versus evil.

In drafting the letter, the bishops were confronted with another unusual challenge. Not only were the bishops facing the quintessential moral problem of our times, but in their field of reference, there are practically no theological moral precedents. They used the only two possible theological precedents available, the theology of pacifism, and the theology of just war. Both were admittedly of little help. First, pacifism as a theological posture going back to pre-Constantinian times refers more to a highly idealistic, individual Christian stance than to a moral imperative of a nation committed to the effective defense of its people. Even

Gandhi had his doubts about the efficacy of passive non-violent resistance against the Nazis in the Second World War, and today nuclear weapons pose an even greater threat.

The Augustinian theology of a just war was promulgated in the days of bows and arrows and spears -- hardly comparable to ICBM's, MX's, cruise missiles, and all of their numerous counterparts. Augustine lived in a day of hand-to-hand combat, not one with the potential for the total annihilation of hundreds of millions of people in a few minutes by the pushing of a single button.

The bishops used what they possessed in the area of moral principles and came close to admitting that the key just-war principles of discrimination (not killing innocent civilians) and proportionality (not using force of greater magnitude than the good to be achieved in justifiable defense) are practically meaningless as applied to nuclear war. When nuclear weapons are used, there can be no discrimination between armies and innocent civilians, and the nuclear force employed is so great it is useless to talk of proportionality -- it is by its very nature of too great a magnitude -- a million times greater than Hiroshima and Nagasaki. One triton submarine has eight times the total destructive power of World War II.

Using the just-war principles of proportionality and discrimination as starting points, the bishops' conclusions are clear, courageous, and to the point.

1. Initiation of nuclear war at any level cannot be morally justified in any conceivable situation.

2. Limited nuclear exchanges must also be questioned, since they may not be controllable. (They may escalate.)

3. No nuclear weapons may ever be used to destroy population centers or civilian targets. Even if the target is military or industrial, the principle of proportionality would rule out targeting it if the civilian casualty toll would be too great.

4. Deterrence policies are morally acceptable only on a strictly conditioned basis. They must not be an end in themselves, but be a step toward realistic and progressive nuclear disarmament.

5. Immediate bilateral and verifiable agreements to halt the testing, production, and deployment of new nuclear weapons are supported, followed by deep cuts in the nuclear arsenals of both super powers.

When one considers the broad sweep of the pastoral letter, minimal requirements are asserted as binding on Catholics. Rather than declaring a final word on a perplexing and complex matter, the bishops made it clear that it was meant to be a first word. The pastoral letter calls for discussion by Christians and others, and it modestly attempts to place the resulting public discussion in a framework of reason and faith. I was particularly impressed by the bishops call for charity and civility in the discussion that would inevitably follow.

Finally, the bishops offer a vision of humanity transcending its differences to avoid nuclear holocaust.

All of this is reminiscent of where we began with the TIME editorial: the working together of reason and spirit, the ultimate challenge of good and evil to a world united in its humanity, though separated in so many other ways. The nuclear threat may indeed finally bring humanity together in ways impossible short of an invasion from outer space. Here, we are all equally threatened from inner space.

I promised to report what I decided to do following my quasi-conversion on that Fall afternoon. No one can do everything, but each of us can do something. In view of the growing groundswell of revulsion and deep moral concern that was burgeoning in the middle eighties, I persuaded Franz Cardinal Konig of Vienna to join me in convoking an international group of scientists and religious leaders to make common cause against nuclear war. It would be the first time we have worked together since Galileo. It worked out better than either group could have imagined when we first gathered on the top floor of the Intercontinental Hotel in Vienna, on a cold blustery January day to elaborate a program. I believe the Holy Spirit was with us. We read in Genesis of the Spirit hovering over the waters. We really needed Him hovering that day. As I opened with a question to Soviet Academician Yevgeny Velikhov, "Will you work with us?," he immediately answered, "Of course, we are both working for peace. We can't do that by just talking to fellow scientists."

We had five additional meetings in Europe (plus one in Japan) bringing together scientists from all the nuclear states, and others, plus religious leaders from all the world religions, in Vienna several times, in London, three times in Rome, and at the Villa Serbelloni in Bellagio, Italy. There has been an extraordinary commitment to common themes and programs for action.

Time permits only a brief taste of the declaration unanimously approved by the delegates of thirty-six National Academies of Sciences in Rome (hosted by the Pontifical Academy of Sciences and greeted by the Holy Father). Six academies were from the Soviet bloc. President Frank Press represented our U. S. Academy. Here are a few disconnected sentences taken from the five page declaration.

"Science can offer the world no real defense against the consequences of nuclear war .....

"It is the duty of scientists to help prevent the perversion of their achievements and to stress that the future of mankind depends on the acceptance by all nations of moral principles transcending all other considerations.

"All disputes that we are concerned with today, including political, economical, ideological, and religious ones, are small compared to the hazards of nuclear war.

"It is humanity as a whole which must act for its survival; it faces its greatest moral issue and there is no time to be lost."

Incidentally, more than three million copies of the total declaration were distributed through a popular science publication in the USSR; 100,000 copies here in the U.S., thanks to SCIENCE Magazine.

Four months later, the main scientific framers of this declaration met with world religious leaders in Vienna. The religious leaders, after studying and discussing the scientists' declaration, unanimously declared in part:

> "What faith impels us to say here in Vienna must be fortified by the hope that it is possible to build a world which will reflect the love of the Creator and respect for the life given us, a life certainly not destined to destroy itself. We join the scientists in their call for urgent action to achieve verifiable disarmament agreements leading to the elimination of nuclear weapons. Nothing less is at stake than the future of humanity."

I believe that Freeman Dyson in the opening pages of his Gifford Lectures (Infinite in all Directions, Harper and Row, New York, 1988, pp. 12-13) caught the spirit of these discussions, although he was not to my knowledge referring to them directly.

> "In recent years, science and religion have come more and more into alliance through their common striving for peace ..... Scientists have written a great deal about nuclear strategy, but nothing we have written is as thoughtful as the Pastoral Letter on War and Peace ..... which the Catholic

> Bishops of America hammered out and issued to the world in 1983. This letter is indeed a challenge, a challenge to us as scientists, as well as to everyone else. It expresses a fundamental rejection of the idea that permanent peace on earth can be achieved with nuclear weapons. It challenges scientists to put our skills to work in more hopeful directions, in directions leading to peace and reconciliation rather than to a precarious balance of terror."

After about five years in this activity, ably assisted by Dr. Thomas Malone, former Foreign Secretary of the National Academy of Sciences, it became apparent that these peace efforts would have to be institutionalized for permanent impact. Thanks to some prodding by former Ohio Governor and U. S. Representative, John Gilligan, we launched at Notre Dame an Institute for International Peace Studies. Now all of our students, both undergraduate and graduate, have an opportunity to learn the price of peace. This past year, a dozen or so graduate students from the USSR, China, Japan, India, France, Brazil, the U.K., and the U.S.A. had the opportunity of living and studying together at Notre Dame. Since they were unique in this experience, and since most of the world's population is like them, under the age of 25, I asked them at the end of this year's journey together, to craft a statement that had to be unanimous, stating: 1) what kind of a world did they

want to live in for the next fifty years, and 2) from this year's encounter together, coming from such great differences of political philosophy, faith or the lack of it, culture, education, and language, what did they think is required to create such a world? After long days and nights of lively discussion, they completed the document, hours before their departure in July. Don't ask me what they said. That is another story, well worth the telling, but not now.

We can well ask ourselves, mainly older, hopefully wiser, without a half century yet to go, these same questions. Before attempting a brief response, let me return again to Hans Morgenthau with whom we began. In 1955, some 33 years ago, he wrote an article "Reflections on the State of Political Science" that is today of considerable relevance to how we answer the challenge of a nuclear age.

Morganthau's article is thirty pages long and can be found in Vol. 17, #4 (1955) of The Review of Politics. I can only quote a few disparate sentences, but they will give you the flavor of his theme which is consonant, I believe, with all that I have been saying here tonight.

> "It must suffice here to state dogmatically that the object of social sciences is man, not as a product of nature, but as both the creature and creator of history in and through which his individuality and freedom of choice manifest themselves." (p. 441)
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> "This political theory as an academic discipline has been intellectually sterile, and it is not

by accident that some of the most important contributions to contemporary political theory have been made not by professional political scientists, but by theologians, philosophers, and sociologists." (p. 444)

This branch of political science which we call empirical theory, reflects in theoretical terms upon the contemporary political world. The political world, however, poses a formidable obstacle to such understanding. This obstacle is of a moral rather than an intellectual nature." (p. 445)

"A political science which is true to its moral commitment ought at the very least to be an unpopular undertaking. At its very best, it cannot help being a subversive and revolutionary force with regard to vested interests -- intellectual, political, economic, social in general ..... it becomes also a political threat to the defenders or the opponents of the status quo or to both." (p. 446)

Finally,

"A political science which is mistreated and persecuted is likely to have earned that enmity because it has put its moral commitment to the truth above social convenience and ambition." (p.447)

Not being a political scientist, but a theologian concerned with the political scene, may I now propose some simple propositions.

1. Nuclear war is suicidal for the human race, no matter who starts it. No second chances.

2. To have 10,000 nuclear warheads aimed at us, positioned on accurate delivery systems hooked up to computers, with an equal number aimed at the USSR, is sheer idiocy on both sides. I think that both President Reagan and Secretary Gorbachev agree.

3. The six or seven new nuclear delivery systems (especially cruise missiles) now in various stages of development and deployment are idiocy squared.

4. The elimination of short range nuclear systems in Europe, agreed upon at the Moscow summit, is the first sensible reduction since 1945 and to be commended as an initial move in the right direction.

5. The proposed 50% reduction will give both the Soviet and American military heartburn -- which of the lethal toys to discard -- but we have to persuade and involve them in this endeavor because it won't be done without their support and they, too, know in their hearts that nuclear weapons are fundamentally unusable -- unless one wishes to commit global suicide. Even discarding 50% still leaves us both facing Armageddon.

6. The most difficult final move, which will have to involve the British and French as well -- is going from 50% to zero. Even to say, "going to zero" gives all the strategic planners on both

sides more heartburn, so they just write it off as idealistic, utopian, well, impossible. If it is possible to eliminate the threat of nuclear death, do not tell me that doing it is impossible. If we created this monster, we can lay him to rest. That will not leave us with a perfect world, but at least a chance for survival in the face of other imminent threats: greenhouse effect, ozone depletion, pollution of the oceans, tropical diseases that affect hundreds of millions of people, world hunger and overpopulation, to mention a few. Even without nuclear weapons, we will not enter the next millennium without problems.

Can we do it, reduce to zero? I think the young people would say, "Why not?" Maybe, just maybe, our forty-five years of survival, despite the nuclear arms race, may have convinced us that war has come to a dead end. No winners any more. Perhaps, if we are really moral and wise, this is the time for all the world to declare that war is no longer a means to solve human problems on this planet. What a way to enter the new millennium. Impossible, improbable, unlikely? Well, let's just try it. I believe we will have the vote of the younger generation, in all nations of the world. Don't take them lightly. They are soon to be in charge.

I think the younger people who want peace, work, marriage, and family, not the end of it all, will resonate with the thought of Freeman Dyson towards the end of his Gifford Lectures.

"If a political arrangement is to be durable, it must pay attention both to the technological facts

and to ethical principles. Technology without morality is barbarous; morality without technology is impotent. But in the public discussion of nuclear policies in the United States, technology has usually been overemphasized and morality neglected. It is time for us now to redress the balance, to think more about moral principles and less about technical details. The roots of our nuclear madness lie in moral failures rather than in technical mistakes." (Infinite in All Directions, p. 266)

The Bishops' Pastoral has a wonderful appeal for hope which we so much need today.

"Hope is the capacity to live with danger without being overwhelmed by it; hope is the will to struggle against obstacles, even when they appear insuperable."

At the risk of overusing Dyson, whom I admire greatly as a scientist, less as a theologian which he admits not being, may I quote one last time from the conclusion of his wonderful book, Weapons and Hope:

"This lesson, not to give up hope, is the essential lesson for people to learn who are trying to save the world from nuclear destruction. There are no compelling technical or political reasons why we

and the Russians, and even the French and the Chinese too, should not in time succeed in negotiating our nuclear weapons all the way down to zero. The obstacles are primarily institutional and psychological. Too few of us believe that negotiating down to zero is possible. To achieve this goal, we shall need a worldwide awakening of moral indignation pushing the governments and their military establishments to get rid of these weapons which in the long run endanger everybody and protect nobody. We shall not be finished with nuclear weapons in a year or in a decade. But we might, if we are lucky, be finished with them in a half century, in about the same length of time that it took the abolitionists to rid the world of slavery. We should not worry too much about the technical details of weapons and delivery systems. The basic issue before us is simple. Are we, or are we not, ready to face the uncertainties of a world in which nuclear weapons have been negotiated all the way down to zero? If the answer to this question is yes, then there is hope for us and for our grandchildren."