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## HIGH TECHNOLOGY AND ITS INTERNATIONAL IMPACT

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If I were asked to answer in *one word* what high technology and its management has to do with international affairs, I would answer *everything*. If I were also asked to cite an example in *two words* in justification of what I have just said, I would say *thermonuclear physics*.

To those who may say that thermonuclear weapons are for war, as distinguished from the conduct of conventional international relations, I would remind them of Clausewitz' well-known dictum that war is the carrying out of international affairs by other means. But even in peace time the existence of thermonuclear weaponry significantly affects international affairs.

We are attempting, more or less successfully, both by multilateral and bilateral diplomacy to manage and curb weapons and technology of mass destruction.

In the multilateral context we have negotiated the Non-Proliferation Treaty seeking to prevent the spread of nuclear devices to states not now possessing them. We have also negotiated the Treaty on Outer Space prohibiting the stationing there of instruments of mass destruction and related agreements. To these we should also add the covenant prohibiting biological warfare.

In our bilateral relations, we have negotiated the Treaty precluding the testing of nuclear devices in the atmosphere and are seeking, through SALT I, SALT II and, in the future, SALT III, to bring some limitation on thermonuclear missiles and the instruments of their delivery. These negotiations have been and are being conducted by diplomats acting for the President,

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who under our Constitution is charged with the conduct of international relations.

What of the scientists who have perfected this high technology? What of the managers and producers of this technology? What of the ethics of this matter? Almost every nuclear physicist has expressed feelings of guilt about Hiroshima and Nagasaki. It appears from World War II documents that Japan was desperately seeking a way to surrender before our nuclear bombs devastated these cities and caused death and injury to thousands of their inhabitants. The reason for the employment of nuclear bombs against Nagasaki and Hiroshima resulted from understandable concern about American casualties in the invasion of Japan and from a good faith but highly regrettable misreading of the clear signals we were receiving, from many quarters, of the Japanese intention to surrender. Ironically, the only condition the Japanese sought to exact was that the Emperor would not be unseated. I say ironically because the basic condition imposed upon vanquished Japan by "The American Caesar," General MacArthur, was to preserve the Emperor, albeit as a national symbol rather than as the son of heaven.

With respect to the scientists of this technology who perfected the nuclear bomb in the Manhattan Project, I would assess no blame. World War II was a war that had to be fought. It was waged to prevent world domination by that insane barbarian Adolf Hitler and, of course, the Japanese attacked us at Pearl Harbor on a day that will live in infamy.

When the bomb was perfected by us, there was no way of really knowing whether Hitler might not have also been on the verge of splitting the atom. In hindsight, it now appears that a major reason for his failure to perfect the device was his expulsion of the Jewish scientists who possessed the know-how to do so. Hitler was thus hoist by his own petard.

Further, the concern about American casualties in an invasion of Japan was genuine. And the decision to use the nuclear bomb against Japan, notwithstanding the clear signals of Japan's willingness to concede defeat, was a political and military one in which scientists played little, if any part.

Scientists also should be free of guilt feelings about refinement of nuclear weapons from the primitive but horrible nuclear bombs directed at Hiroshima and Nagasaki to the sophisticated thermonuclear weaponry of today.

For a short time, we did enjoy a dubious monopoly on the

bomb but, it is to be remembered, that President Eisenhower offered at the United Nations a plan to forego nuclear arms and to devote the energy of the atom to peaceful uses. He had no acceptance from our principal adversary. The Soviet Union had mastered its technology and indeed perfected the hydrogen bomb before we did.

In the McCarthy era, we ascribed this ominous development to the treachery of spies and traitors. There were spies and traitors in our midst but, it now appears, that the Soviet Union had the capacity to master this technology without the help of Dr. Fuchs and others, perhaps with inconsequential delay. It is only realistic to recognize that in the presence of the formidable mass of Soviet nuclear arms that the United States must possess a sufficient number to deter a Soviet attack. When I was on the Supreme Court, I wrote an opinion in which I said that our Constitution was not a suicide pact. Indeed it is not.

If the entire world community were to agree to abide by the rule of law, and to live in peace and harmony, with all nations abjuring both nuclear and conventional weapons, the situation would be drastically different. But regrettably this is not the case. This is not to say, however, that scientists do not have the obligation to alert our citizens and the world community that the nuclear clock is close to reaching midnight. And to their credit, some among them are attempting to do so. Scientists have also made it clear that the means taken to curb and limit nuclear weaponry are woefully inadequate.

Thus far, I have spoken of thermonuclear weapons but, since the United Nations was formed in 1945 to rid the world of the scourge of war, more than 150 wars have been fought in various parts of the world. And these wars have been waged with conventional weapons—increasingly sophisticated ones to be sure: smart bombs, supersonic fighter aircraft, armor piercing antitank weapons, surface-to-air and surface-to-surface missiles and other high technology weaponry which presently characterizes current non-nuclear warfare. Even though nuclear weapons have not yet been employed and world-wide conflict has been avoided, in the more than 150 recent wars, hundreds of thousands of people have been killed, maimed and disabled since the end of World War II.

The question therefore recurs, how are we managing the use of the high technology employed in the production and use of non-nuclear weaponry. The answer here too can be in *one*

*word—poorly.* Sophisticated weapons are sold by us in enormous quantities. For better or worse, we are the principal arms merchant of the world and the Soviet Union and their and our allies are close behind. It is tragic that nations that cannot afford to feed their own people are avid customers for these arms. And affluent nations that produce such sophisticated weapons are avid sellers. Again, this is a terrible dilemma. If we curb our sales of conventional arms, as President Carter has said he would like to do, the Soviets are more than willing to sell and so are some of our NATO allies and the members of the Warsaw Pact.

There is a recent "hopeful" sign of significance in this area. The Shah of Iran spent a kingly portion of the largess of his oil in purchasing from us airplanes, tanks, guns—you name it—but such purchases did not prevent his overthrow. I can only hope that this lesson will be learned by arms merchants and buyers alike.

There are other aspects of high technology and "so called" conventional warfare. We have outlawed poison gas and biological warfare. This is all to the good. But we have not succeeded in agreeing upon a genuine and fair mutual reduction of forces between NATO and the Warsaw Pact. Nor have we succeeded in convincing the super powers and the third world of the wisdom and indeed the necessity of settling their disputes by sensible methods of mediation and arbitration. Third party settlement of international political disputes is rarely resorted to by rich and poor nations alike. Will this come about? In short terms, I fear not. I view the foreseeable future, as it relates to weaponry, with concern, alarm and foreboding. And I am most apprehensive of what may occur in the lifetime of my children and grandchildren both in the nuclear and non-nuclear areas.

Can the scientists and managers of weapon high technology of the world agree, regardless of ideology, to call a halt to the application of this technology. The answer I fear, is no. The scientists of the West might, since they live in democratic societies and share basic moral and ethical concepts. But the scientists and managers of the East are not free to do so. Lest we become too virtuous we cannot assume, however, that the industrial-military complex in the West is not a potent factor, as President Eisenhower warned us.

In fairness, it needs to be said, disregarding propaganda, that our adversaries are not willing to abandon or substantially curtail instruments of war. And, I repeat, we cannot disarm

alone. This is a gloomy picture but I fear a true one.

There is, however, a brighter side and it is high technology in the international area in non-military affairs. We now have or have within reach, for the first time in history, the technology to conquer hunger, eliminate disease, educate children, control populations, and thereby contribute to a decent life for the peoples of the world. We, of the West, cannot be the world's policeman. But, if the political will is present, we can be the world's savior.

What is called for and what is possible is a consortium of the rich countries to aid the poor through proper use and management of Western high technology. We have given aid but not, with the notable exception of the Marshall Plan, commensurate with our resources and the need. And the aid extended through the United Nations and the World Bank, though valuable, falls far short of the need.

The aid we give must be a mix of money, material, technology and good management. And we of the West must find a way to prevent our military requirements and our pressing domestic needs from extending such help on the gigantic scale which is necessary.

This is the challenge of high technology, its management and governmental political will, in international affairs. This is the opportunity. And this is also the necessity. For as President Kennedy once reminded us: "We cannot be an island of affluence in a sea of poverty."

I, for one, persist in the hope that if the wealth of the world is shared and made available, and if high technology and its management is put to the service of mankind, and if the political will for universal peace and justice prevails, nations, large and small, will "beat their swords into plowshares, and their spears into pruninghooks . . . [and] shall not lift up sword against nation, neither shall they learn war any more."<sup>1</sup>

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1. *Isaiah 2:4* (King James).

