

Prof. Thomas Schelling

It's an honor to be selected to talk to you this morning. What Sten neglected to mention is that I have spent more than 12 months at IIASA as a scholar in residence and attended at least half a dozen other conferences at IIASA so I feel myself to be one of the most elderly alumni of that wonderful institution. When I proposed to Sten that I might talk about managing nuclear proliferation, I was hesitant. I hadn't yet thought about what that has to do with IIASA and IIASA's mission. But Sten was apparently enthusiastic and he encouraged me, so that's what I'm going to talk about and if you want to know how this relates to IIASA, I will come to that shortly.

I am going to put a somewhat optimistic interpretation on recent nuclear history and even the nuclear future. I want first to impress on you the fact that I could be talking about not managing nuclear proliferation, but maintaining nuclear non-proliferation. I think it is not widely enough appreciated how successful or how fortunate we have been during the past several decades of nuclear weapons development. I am old enough to remember quite vividly the expectations in the 1960s of how many nations would acquire nuclear weapons in the coming few decades. I remember when the US government devoted several years to trying to design and implement a policy that would keep Germany from demanding its own nuclear weapons. I remember when there was discussion about the reversion of the island of Okinawa to Japanese sovereignty, the question of whether American nuclear weapons would be kept on that island, thus introducing nuclear weapons into Japanese territory. If anybody had predicted in the 1960s or even the 1970s that we would finish the century with no more than eight, nine, or ten nations possessing nuclear weapons, that prediction wouldn't even have been listened to. Nobody could believe that so few nations would have acquired nuclear weapons or even wanted to acquire nuclear weapons over the coming three, four, or five decades. That's why I would say maintaining non-proliferation may be the correct term.

On the other hand, I am not at all confident that there won't be more nations acquiring nuclear weapons and therefore I think of managing proliferation as learning not only to live in a world with more nuclear weapons, but to live peacefully in a world that may have more nuclear weapons or more nuclear weapon states. So I would say mankind has been remarkably successful or remarkably fortunate that there aren't more than the current eight, nine, or ten nuclear nations. When I say fortunate, I think possibly one contributor to the non-proliferation that has occurred was a dreadful tragic accident that occurred in the Ukraine in 1986, namely, the explosion of one of the nuclear reactors of the Chernobyl complex. That was an accident that spread its influence thousands of miles to the point where in Lappland, at the very northern tip of Europe, people had to stop drinking reindeer milk because the animals were feeding on vegetation contaminated with radioactive fallout. It's hard to remember what the plans were for a nuclear future 30 or 40 years ago. People are very concerned now about prospects for nuclear reactors in Iran. Not many people remember that the Shah of Iran before the Iranian revolution of the late 1970s, had definite plans to build 18 nuclear power reactors in his country—the idea being that oil was too precious to burn at home to make electricity and nuclear power was a solution. Not many people remember that at the same time, Brazil had a

contract with the German government to help construct 12 thousand megawatt nuclear power plants in Brazil. Something stopped an interest in nuclear power and we may be enjoying some of the benefits of the disillusionment with nuclear power that occurred two or three decades ago. Whatever it is, we've had far less nuclear proliferation than any serious predictor would have taken seriously.

Now I think something much more astonishing can be said about the last more than half century. Hardly anybody seems to appreciate that we have gone 62 years, three months, and five days since the second and last nuclear weapon was exploded in warfare. 62 years – no use of nuclear weapons. Not because there haven't been any wars that could have involved nuclear weapons. I count at least six wars in which one side had nuclear weapons and did not use them. Two occurred on the Korean Peninsula. The first war was the United Nations against North Korea, which looked perilous for a while but the successful landing of troops at Incheon led to the withdrawal of North Korea, victory for the United Nations. Then, committing what I think was its greatest foreign policy blunder in history, the United States got so close to the Chinese border that the Chinese, I think unwisely, surprised the United States with overwhelming military force. Leading to, for the UN forces, a disastrous retreat and then a whole year of bloody war of attrition before a truce could be arrived at. Still no nuclear weapons used by the United States. China did not yet have nuclear weapons.

In Vietnam, nuclear weapons were available to the United States. Many people were afraid that if the US bombers went close to the Chinese border, the Chinese would have to intervene and by 1965 the Chinese certainly had some nuclear weapon capability. In 1955, a war almost occurred in which I think nuclear weapons would have been used. It was thought that the Chinese, the People's Republic of China, might attack what we used to call the National Government of the Republic of China on the Island of Formosa. And the United States conspicuously sent nuclear artillery shells to that Island. Fortunately the Chinese didn't test whether the United States would use nuclear weapons. When else were nuclear weapons not used? Well in 1973, there were 2 Egyptian armies on the Israeli side of the Suez Canal. Everybody knew that Israel had nuclear weapons. These were perfect military targets with no civilians within tens of miles. Israel did not choose to use nuclear weapons even facing that military threat. I had occasion a year later to be with Golda Meir, the Prime Minister of Israel, and I tried to get her to explain why Israel had abstained from defending itself against Egypt and Syria with nuclear weapons. I was quickly reminded that Israeli officials don't talk about nuclear weapons. I can easily imagine, however, that Golda Meir, was a wise woman and said to herself or maybe discussed with her advisers – one of these years, or one of these decades, one of our hostile neighbors may acquire nuclear weapons and Israel shouldn't be the one to break the taboo.

I use the word taboo because that's the word that President Eisenhower's Secretary of State John Foster Dulles, used the person who became famous for referring to nuclear weapons as giving more bang for the buck. Within three weeks of the inauguration of President Eisenhower, John Foster Dulles, Secretary of State had a cabinet meeting. The minutes say Secretary Dulles discussed the moral problem in the inhibitions on the use of

the A-Bomb. It was his opinion that we should break down this false distinction. Notice the moral problem was the inhibition, not the possible use of nuclear weapons. And a few months later, again at a cabinet meeting, the same secretary Dulles said "Somehow or other we must manage to remove the taboo from the use of these weapons." That's my authority for referring to the taboo. A taboo is something stronger than merely a tradition. It involves even something spiritual, and I think secretary Dulles felt that. And if he, as an enthusiast for nuclear weapons, could perceive a taboo, it is not surprising that Golda Meir a decade later would appreciate it. It is interesting, it was the express US policy spoken I believe at a secret NATO meeting that the US position that nuclear weapons "must now be treated as in fact having become conventional." In those days, of course, conventional meant just like any other traditional weapons: machine guns, barbed wire, explosives, and so forth. It's interesting, in 1964, September of 1964 after Lyndon Johnson had become President and the war in Vietnam was just beginning to boil, the president was asked at a press conference whether nuclear weapons indeed were now to be treated as conventional. He said "Make no mistake, there is no such thing as a conventional nuclear weapon. For 19 peril-filled years, no nation has loosed the atom against another. To do so now is a political decision of the highest order." I think he was in awe of the fact that for 19 years – only half as long as IASA has now been in existence – that 19 years was a remarkable length of time in which no nation had "loosed the atom against another."

What other wars were there in which one side had nuclear weapons? Not many people remember that the United Kingdom went to war with Argentina over the Falkland Islands. A war that was fought entirely at sea, no civilians anywhere near the battles, nuclear weapons could have been exceedingly effective against Argentinian warships. Prime Minister Margaret Thatcher probably never even considered the use of nuclear weapons to defend the Falkland Islands against an Argentine invasion. I think she must have felt it would have been abhorrent to use nuclear weapons against an opponent that had none, even on the high seas where anybody hurt would be a military target.

And then, most amazingly to me, the Soviet Union went to a long, bitter, bloody, demoralizing war in Afghanistan and never introduced nuclear weapons. I would not have felt that the Soviet leadership would be responsive that the taboo that John Foster Dulles had denigrated. I would not have thought that the Soviet leadership would be in awe, as President Johnson was when 19 years had spread to about three decades, but even the Soviet Union must have felt either that the taboo was real or that enough of the world believed in the taboo that it would be unwise to make the first use of nuclear weapons since Hiroshima and Nagasaki. I think this abstention from any use of nuclear weapons is even more impressive than the non-proliferation that has occurred. Not everybody feels the way I do. There are people who feel the Way John Foster Dulles did. I think a lot of people in my country, possibly in the government of my country who believe that the United States is so rich in nuclear weapons that it would be a shame to be unable to use them when they'd be militarily effective. I think we are so rich in people and structures and cultures that it would be a shame to engage in any practice that would subject us or the rest of the world to nuclear dangers as would exist if the taboo were conspicuously broken, especially broken by the United States. I think the 62 years, call

them peril-filled years as Lyndon Johnson did, are an almost unbelievable good fortune and an asset that must not be squandered. Just to remind you, in 1960 on the front pages of the New York Times, CP Snow, the distinguished author, was quoted as saying: “Unless the nuclear powers drastically disarm at once, intercontinental thermonuclear war within the decade is a mathematical certainty.” Nobody seemed to think that was an outrageous statement, or even an extravagant statement. A mathematical certainty within the decade. We’ve now had more than four decades compounding that mathematical certainty and the war he predicted didn’t occur. I

In 1985 the fortieth anniversary of Hiroshima and Nagasaki, there appeared a lovely essay in the Bulletin of the Atomic Scientists written by Alvin Weinberg. Alvin Weinberg was the director of the Oakridge National Laboratory which enriched the uranium for the first uranium bomb in Oakridge, Tennessee in the United States. Incidentally, Oakridge, where the uranium that destroyed Hiroshima was produced, has been for many years a sister city with Hiroshima, with a large bronze bell that was donated there to celebrate peace between Japan and the United States. Alvin Weinberg, who confessed that he believed that the bomb on Hiroshima, not the one three days later on Nagasaki but the bomb on Hiroshima, in the end saved Japanese lives as well as American lives, wrote this in 1985, the fortieth anniversary. He said: “Are we witnessing a gradual sanctification of Hiroshima? That is, the elevation of the Hiroshima event to the status of a profoundly mystical event? An event ultimately of the same religious force as biblical events? I cannot prove it,” he said, “but I am convinced that the fortieth anniversary of Hiroshima, with its vast outpouring of concern, its huge demonstrations, its wide media coverage, bears resemblance to the observance of major religious holidays. This sanctification of Hiroshima is one of the most hopeful developments of the nuclear era.”

Twenty years later, on the sixtieth anniversary, August 6th and 9th of 2005, I didn’t see any vast outpouring of concern. Any huge demonstrations, any wide media coverage. I did not see any mention on television or in the press that we were celebrating the sixtieth anniversary of those two bombs. No resemblance that I could see to a religious holiday. Maybe that’s good. Maybe on the fortieth anniversary, people were still so stunned by the advent of nuclear weaponry that going forty years deserved huge celebrations and wide media coverage. By the sixtieth anniversary, there aren’t many of us around who are old enough to be appalled at the development of atomic weapons, who are still physically able to engage in large demonstrations. Maybe there’s even some confidence that the taboo is likely to defend us against possible future nuclear weapons. And that we can now take Hiroshima for granted and not treat it as something like the biblical flood. On the other hand, I think we need to help others understand the nature of that taboo. And this brings me to the relevance of this subject to IIASA.

When Leen Hordijk described the mission of IIASA, I took out my pen to take notes. He did not mention what I took to be the original mission of IIASA. I think IIASA has developed such an esprit of scientific spirit, of policy-oriented scientific spirit, and has developed such a reputation as one of the most respectable thinking institutions in the world, that people don’t remember what motivated the establishment of IIASA. I think what set IIASA’s initial mission was what I call the boldest diplomatic initiative I’ve ever

heard of. The President of the United States, just a few years after that dreadful Cuban Missile Crisis in which many people think the United States and the Soviet Union almost joined in nuclear war, the President of the United States got the idea from somewhere that one way to try to survive what we were then calling the Cold War was to establish some kind of an institution for people not concerned with nuclear weapons but concerned with the scientific analysis of common problems of the 20th century, to get together on neutral territory and work not just side by side but together. I think it was fortunate that George Bundy, who had been President Johnson's National Security Advisor, had become President of the Ford Foundation and had funds to contribute. I think it was fortunate that my close friend and colleague Howard Raiffa got engaged in the diplomacy, and it was extraordinary that the Soviet Union responded to this notion that two nations that were bitterly locked in a nuclear arms race might collaborate in setting up, unprecedentedly, a research institute in which Soviet citizens, and Ukrainians, and Poles, and Hungarians, and British, and French, and Canadians, and even Americans could work together. I think the choice of Laxenburg reflected not only the generosity of a splendid site but also recognized that Austria presented neutral territory in which especially people from the Eastern bloc could feel comfortable working together with people from the West. I mention this because when Leen Hordijk mentioned that China and South Korea were both contributors, participants in IIASA, we have to remember that the United States and China were at war with each other. That South Korea and China were at war with each other. He mentioned India and Pakistan, and they have been at war with each other. IIASA is unique as a place for Eastern bloc and Western scientists could work comfortably together in or near a city that was recognized as not belonging to either side in the cold war. I even think it wouldn't be ridiculous to consider the possibility that North Korea be invited to participate. It sounds awful doesn't it, but you know, that would be no worse than having the United States and the Soviet Union participating in something like IIASA. I think it was part of the mission of IIASA if only because no other institution can claim that mission. To be a place where Indians and Pakistanis, even during a time when there are still military skirmishes going on in disputed territory, Indians and Pakistanis can work together in a place like IIASA and South Koreans and Chinese and Americans can work together. That I take to be a mission which shouldn't be forgotten. One difficulty with getting used to that mission is that it may be taken for granted and indeed when the Iron Curtain fell a decade and a half ago, maybe some people felt that IIASA was now relieved of its responsibility to continue to be a unique diplomatic mission in the world but I would like to leave with you the thought that IIASA's greatest success was not in contributing to the Intergovernmental Panel on Climate Change, or to an assessment of energy in the new era, but that IIASA is uniquely a place that is endowed by history with the mission to bring together scientists and nations, independently of whether those nations consider each other friends, allies, opponents, adversaries, enemies, and I wish IIASA bon voyage. Thank you.