
Documentation

Dr. Edward Teller tells press: 'Science can end the age of thermonuclear terror'

Dr. Edward Teller, a nuclear physicist who played a leading role in the Manhattan Project and then went on to participate in the U.S. development of the hydrogen bomb, addressed the National Press Club Oct. 27. Dr. Teller, 74, is a member of President Reagan's Science Council, a senior research fellow at the Hoover Institution, a consultant to the Lawrence Livermore Laboratory, and professor emeritus at the University of California. A full transcript of his speech and extensive selections from the question period follow.

One of the obvious things is, a point that absolutely all of us, those present and those absent, every American, I believe, shares, is our determination not to have another war, another big war like the first and the second world war, or worse. There is no difference of opinion on that point. There is a difference of opinion what is the best way to avoid another war.

Our policies for years have been on the wrong track.

For a quarter of a century we have conceived of our situation as a balance of terror, and the dreadful point is, that the terror is obvious; the balance is not. President Reagan had the honesty and the great courage to state that the Soviets are ahead of us in important military respects, including nuclear weapons. This is obviously not a popular statement. It is obviously not a self-serving statement. And it is obviously a statement about a situation that the American people need to know. But no one except he in high office had the courage to make that statement.

I have talked to many audiences, including students, and I found in general that about 10 percent are for the freeze, about 10 percent are against the freeze, and 80 percent are scared. They have every reason to be. This policy has been introduced by a peculiar man who for seven years was our Secretary of Defense: Robert Strange McNamara. The Mu-

tually Assured Destruction, or MAD policy, is something that I don't see how anybody can like. That people should look for an alternative I fully understand.

But the alternative, the oversimplified proposal of the freeze movement, which has been labeled as simple as a can-opener, will not help us by opening this can of worms. We need, and we can have a much better solution.

No, it is in the nature of development of weaponry that if anything new comes up, and certainly atomic weapons is something very new, the first application as a rule is destructive. And, the defensive uses need very much more sophistication. We have arrived at the point where the ingenuity of several of my young colleagues has produced, to say it very cautiously, proposals for defensive weapons. I, as befits a person advanced in his 70s, was incredulous, but also obviously and greatly interested.

I want to be very clear about this point. I am not talking about one proposal. I am not talking about one magic solution, I am talking about a whole trend. Furthermore, we have good evidence that the Soviets are familiar with the ideas on which we are working.

There remains nothing more for me to do but to tell you what these new ideas are. For that is both difficult and also impossible. It is difficult because of all matter known to man, the one with the greatest inertia is the human brain. To accept, absorb, evaluate a new idea is immensely difficult even in your field. And if it is not in your own field, it becomes almost impossible. And many scientists, many excellent scientists, who looked briefly and in some places with some prejudice, at these new ideas, have rejected them—as I did, when I looked at them the first time. But the more I looked, the more convinced I became. That is why it is difficult. It is impossible, because these ideas—not the details, but the very ideas—are classified. We call it not only secrecy, but "security." It isn't, because the Soviet leaders know; the American

people have a need to know. But they are not told.

At the very beginning of the Cold War, the greatest physicist of all, Niels Bohr, said, "In the Cold War it would be reasonable to expect that each side will use the weapons that it can use best. And the appropriate weapon for a dictatorship is secrecy. But the appropriate weapon for a democracy is the weapon of openness."

And "openness" is a weapon. It could bring us and our allies more closely together. It could produce a situation where money counts, but where ideas and their thorough execution, which does not cost very much money—that counts incomparably more. In such a situation, the free democracies, working together, could be irresistible.

From sad experience, I know, and I believe many of you recognize, that the Soviet leaders have an ambition to rule the world as did Hitler. But, there is an enormous difference between the men of the Kremlin and the Nazis. Hitler was an adventurer. The rulers in Moscow are not. When they are faced with an uncertain situation, they will not embark on adventure.

If "freeze" prevails, the consequences are predictable. People talk about bilateral "freeze." How will you check on fabrication, and what's more important, on research, in a vast country, in the Soviet Union? Will you send over 100,000 Americans who can go everywhere, find out anything? Will that be permitted? If that were truly permitted, I believe it would be the end of the police state in the Soviet Union, and for that, I would give anything. But instead, you know what the situation is. That is how bilateral freeze would be.

I also believe that to try to pursue a freeze, without understanding the situation, without evaluating the alternatives of developing defensive weapons which would act on both sides for stability and peace—we cannot evaluate this without at least discussing the ideas I refer to.

One example: we have a great amount of valuable, relevant material about Soviet civil defenses. A trickle has been published. Why not all? The Soviets know it, they know what civil defense measures they have taken. They know how we know it. They know we get it from refugees. Why not make a beginning with a law which forbids the classification of anything pertaining to civil defense? What should be kept secret in a difficult time and what should not, cannot be judged in a few words and in an oversimplified manner. But that the American people should not know what the Soviet leaders know, and what they need to judge, decisions in some other simple cases, these can be decided.

Ladies and gentlemen, I lived through two world wars. In the first, I was a child, but I knew what was happening. 15 million people were killed in the country of my birth, and it was torn apart. I remember the days before the second world war when the small Chamberlain, not the one who is more than 7 feet tall, went to Munich with his umbrella, and brought home "peace in our time." That peace lasted for one year. And was followed by the killing of more than 15 million

people, and the murder of most of my close friends in Hungary, and many of my close relatives. I use the word murder deliberately. This could have been avoided, except for the well-intentioned folly of Chamberlain. This well-intentioned folly may be now repeated by the advocates of the freeze movement.

We must find an alternative, and we must not be led by the simple slogans which are apt to increase the danger of war.

Ladies and gentlemen, this is why I am against the freeze movement, and why I conceive of this issue as probably the most important in this year. Thank you very much.

Questions by the press

Q: How sure are you the Soviet leaders already know our secrets. How do you know that?

Teller: That is a secret! But part of my knowledge comes from little things like published Soviet literature. I don't know how to draw the line between the obvious, what one can obviously talk about, and the subjects which have been classified secretly, because it has even occurred that the obvious has been classified as secret.

Q: How did the Soviets learn what the American people cannot learn?

Teller: They are not stupid!

Q: In the 1960s you spoke against the limited test ban treaty on the grounds that a new absolutely clean weapon would soon be developed that would eliminate the hazards of radiation in atmospheric testing. That never happened. Why should we believe you this time that we have defensive weapons to ensure stability and peace?

Teller: The questioner is slightly misinformed. I have never claimed that absolutely clean weapons will be developed. I only claimed that weapons can be developed which are clean enough so that their testing will not cause a contamination of the atmosphere which is even approaching anywhere near what we get from natural sources in any case. And this has happened. We know how to make such clean explosives. And I think their testing in the atmosphere should not have been ruled out. One of the consequences of that limited test ban which drove testing under ground, is this: Before the test ban the debris of Soviet tests went into the atmosphere. We could collect it and learn something about what the Soviets are doing. Today we cannot do so. We have no idea what the Soviets actually are doing with their tests, but they have an excellent idea what we are doing, because as Niels Bohr has said, a democracy is just not good at keeping secrets. And if we really would try to keep these secrets, not only imposing it on the people who are reliable but trying to impose it on people like, oh I don't know, like somebody who will sell it to the *New York Times*—I forget his name—that kind of secrecy does not work. And as far as whether you should

believe it, the example quoted I don't think proves the question at issue, and may in turn quote a really great man who said once about himself: "I was not always wrong." That was Winston Churchill.

Q: What kind of defensive weapons are feasible and could provide for stability, as you mentioned? ABM? Space weapons?

Teller: I told you that the kinds that we are working on is classified. If I would now begin to give you a list of all the kinds that won't work, somebody could accuse me of having broken the law. I am not going to break the law. Because without law, we could not live in a decent cooperative society. But in this country, though not in the Soviet Union, you can criticize a wrong law, and if the law is, you can change it. And I don't see any group that could better look into the question how openness can be stimulated than the press.

Q: Do you believe there will be war between the Soviet Union and the U.S. by 1990?

Teller: If the freeze people prevail, and if we don't submit to Soviet dictates, then such a war will become likely. If we behave more reasonably, and the first step should be the rejection of the freeze initiative, then I think under the leadership of the present administration, we still have a very good chance to postpone any confrontation, and to create a situation where more and more postponement is possible—where we can do much more than avoid war.

By cooperation with those who are willing fully to cooperate, we can improve the very horrible way of life in the Third World. We can by using technology create a situation where the reasons for war will diminish and keep diminishing. If our allies and we cooperate both in making a stronger defense, and bringing about the origin of real peace, the pursuit of the common aims of mankind, at least in the free part of the world, then in the end even in the Soviet Union where tyranny was endemic—and I here include czarist Russia for centuries—even in that part of the world that in its history has never experienced anything like freedom, even there I think a change of thinking may occur.

I am not telling you that if we can avoid war now, and I think we can, then the golden age will be here. We will have many other problems, and perhaps even greater ones. But I want to have for my children and my grandchildren the chance to confront these new problems, to struggle with them, and to do it as individuals.

Q: You oppose the freeze. You opposed SALT II, you opposed the limited test ban treaty. Are there any arms control agreements you favor? What are they?

Teller: . . . the real measures which I favor are not treaties which start by the word "don't," I am in favor of treaties which start with the word "do," which encourage cooperation and which attack not the means of warfare, but the roots of conflict.

U.S.S.R. advances on beam-weapons work

by Steven Bardwell, Military Editor

The whole structure of Western military strategy, deployment, and order of battle proceeds from the assumption of the unwinnability and unfightability of nuclear war. The clear and painful irony is that our only nuclear-armed adversary does not share that assumption. The Soviet Union has structured its strategic outlook, deployment, and order of battle around the reality of world nuclear war—its fightability, winnability, and qualitative similarity to other kinds of war.

Although many Western observers have characterized Soviet concern over defensive capabilities as paranoid or obsessive, the actual structure of the Soviet defensive deployment is entirely consistent with their overall military strategy, and perfectly rational given their assumption that nuclear war is terrible but fightable. The Soviets have three distinct thrusts to their defensive policy.

Velikhov heads a crash development effort

At one of the U.S.S.R.'s largest industrial facilities, Academy of Sciences Vice-President Yevgeni Velikhov is heading a special program for the development of beam technologies. The economics magazine of the Academy's Siberian Division, *EKO*, has publicized the program in a feature-article section in its most recent issue, calling it an excellent model of the unification of science and production.

EKO reveals that since 1977 (the year Cyrus Vance proposed to Moscow "deep cuts" in both strategic arsenal and advanced technologies, and was sent packing), a team of scientists from the Academy and the Kurchatov Institute of Atomic Energy has been working to build a beam technologies laboratory using the resources of Moscow's Likhachov Auto plant (known as ZIL), one of the very largest industrial enterprises in the Soviet Union. They are working on the construction of laser, electron-beam and plasma devices for commercial applications, thus benefitting the Likhachov company directly, while at the same time expanding the resources of the beam-technology research program far beyond anything previously done. Velikhov is a