

When Soviet and American Scientists Worked Together

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Synopsis: Roald Sagdeev led scientists in Gorbachev's USSR; Frank von Hippel was his counterpart in the US. They worked together to reduce the risk of nuclear war.

Note: Please note this transcript has been edited.

Metta Spencer

I'm Metta Spencer. Did you know, there was a time when the Americans and the Soviets got along? And the scientists were good friends. And we need to think about those days. I have here with me, although they're at their own computers, two very, very eminent scientists who were engaged with each other and with saving the world. I think we can owe a lot to both of them for their part in bringing the end into the Cold War. And I want to have a conversation today when these two men reminisce about the old days. Roald Sagdeev was in those days a Soviet scientist, and he was very active in the Committee of the Soviet Scientists, which interacted very much with another organization, an American group that was headed by Frank von Hippel. Now, Roald Sagdeev, many years ago, moved to the United States. So, he's in Maryland right now, but has often been in touch with his old pal, Frank von Hippel. They recently celebrated the 100th anniversary of Sakharov, another scientist of that generation who was also probably even better known than they for his work as not only the father of the Russian hydrogen bomb, which was not exactly something I would celebrate, but also, he was very famous as a dissident. A very courageous man. So, he's no longer with us, but these two men are. So hello, fellas. Roald Sagdeev, let's ask you, if you will, to give us a pre-history of this historical period that we're going to be reminiscing about. Will you tell us what was going on after Stalin died and bring us up to the 1980s?

Roald Sagdeev

Scientists contributed a lot to the nuclear era. And it is not surprising that those who were very involved in designing nuclear weapons were also great scientists of the 1930s, 1940s, and 1950s. They were some of the first to tell the governments that the world might perish if

policies were not changed. I remember I was a young scientist in the 1950s, just at the beginning of my career. Stalin had just passed away. At the time when I was about to graduate from the University of Moscow, I remember the great American nuclear physicist Leo Szilard tried to write a letter to Stalin to explain how dangerous life would be during the nuclear era. And he didn't actually send this letter. Probably, Stalin was not the guy who would receive this letter in a kind manner. But a few years later, [Szilard] actually sent a letter to Khrushchev, the successor of Stalin. This was delivered to the hands of Khrushchev by Soviet scientists that he met at early meetings. And this led, actually, to a very interesting meeting in New York, when Khrushchev during his political visit, invited Leo Szilard to talk about nuclear dangers. And so, that was an interesting indication that sometimes governments try to hear what scientists would tell them. Similarly, on the Soviet side, Sakharov was the first who raised the alarm about the danger of nuclear tests and the radioactive contamination of the atmosphere. He wrote a number of letters to Khrushchev and equally on American side, my friend Frank von Hippel, did very important work with a very detailed analysis of this radioactive fallout and its dangers. So, this call, coming from these two scientists, virtually created the process of negotiations. Khrushchev was involved, as was John F. Kennedy. And it ended with a very important treaty banning or partially banning nuclear tests, in the atmosphere, in the oceans, and in outer space. So that was the very first step at that time.

Metta Spencer

When was this organization founded? The Soviet Scientists... what was the name of the committee?

Roald Sagdeev

The Committee of Soviet Scientists to Prevent Nuclear War. It was established in the early 1980s, following the very difficult events when the Soviet Army invaded Afghanistan in late 1979. And it actually interrupted all the regular contact, virtual contacts, and consultations on important issues between Soviets and the West and between the United States and its Allies. And I think that it was an understanding on both sides, that something has to be going on. Some kind of contacts, interaction, partially to create transparency, to prevent the accidental [use] or whatever will happen with nuclear weapons. And so, there was a creation of this group, under the auspices of the Soviet Academy of Scientists. That was a move which came on the Soviet side.

Metta Spencer

The Union of Concerned Scientists had been around since almost the end of World War 2, right?

Frank von Hippel

It was the Federation of American Scientists. The Union of Concerned Scientists is a different organization.

Metta Spencer

Pardon me. I'm sorry. I know better.

Frank von Hippel

I was very interested to hear Roald explain that pre-history. Just one correction: Sakharov's counterpart on the US-side was Linus Pauling, who was actually equally.... Later on, I just became involved in checking Sakharov's calculations. But I became involved when we received a letter from the Committee of Soviet Scientists asking us whether we had changed our minds about the possibility of there being an effective defense against ballistic missiles. So, this was following President Reagan's speech in March 1983, where he called on the US scientific community to pitch in and develop what became known as "Star Wars." We responded that we hadn't changed our minds. And we were invited over – the leadership of the Federation was invited – over to Moscow - and then we had a side trip to Tbilisi in Georgia over the Thanksgiving weekend in 1983 - to talk and to brainstorm about how to keep things from going out of control. And it was just after the scare about a possible nuclear war that had happened just earlier that same month.

Metta Spencer

That Able Archer [83] thing?

Frank von Hippel

Able Archer [83], the NATO exercise.

Metta Spencer

You should explain it a little.

Frank von Hippel

This was one of a series of NATO exercises. And it was to end with a nuclear tabletop aspect of a US nuclear strike against Eastern Europe. I think the scenario must have been a Soviet invasion of Germany. It was more elaborate exercise than the previous exercises and the Soviets were worried that this was a real thing. Especially after Reagan had been calling the Soviet Union the evil empire. It was one of the near misses that we had of actually going from this nuclear confrontation into an actual nuclear war during the Cold War. They thought that the US might be preparing an attack on Eastern Europe. The Soviets actually started loading bombs, fighter bombers, and nuclear bombs in case. And there were discussions of preemption. Fortunately, NATO didn't respond by escalating to the Soviet Union's response. Therefore, the exercises ended without anything happening.

Metta Spencer

I think we've left out a few years there, because in between Stalin and the period you're talking about, there was this buildup of tension, which we haven't described. The fears arose in all parts of the world, that there would be a nuclear war, because there was a buildup of and the intention to install missiles closer and closer in Europe. And then we get to the period that you've just talk to me about in 1983.

Frank von Hippel

There was an earlier crisis in 1962 - the Cuban Missile Crisis - which was perhaps the closest we got, but then there was a long period of detente through the 1970s. And then in 1979, after the Soviet invasion of Afghanistan; and then with Reagan coming in with this - you know - brave hawkish view, we had this second crisis in the early 1980s, which I guess peaked with this Able Archer [83] exercise.

Roald Sagdeev

Yeah, and this crisis was growing since the late 1970s. It started with Soviet plans to deploy a medium range rocket to threaten major European capitals -NATO allies of the United States - and to intimidate them. And in a reciprocal act, Americans started deployment of a similar type of medium range rocket, which would be able to reach Moscow from much closer distances - 1000 miles or shorter. And so, the crisis is what they called the Euro-Rocket Crisis and was very serious. Both sides understood that it would change qualitatively the balance of powers if there would be risk of launching such rockets - nuclear rockets - from shorter distances. I remember the Soviet government's Politburo was extremely afraid of all these things. And suddenly, on top of that, Reagan delivers his speech about Star Wars. That was a culmination in 1983.

Metta Spencer

Yeah, well some of us had been meeting in the earlier 1980s. Before the Star Wars thing began. I was already well engaged, because I had probably made 10 trips - well maybe not 10 by then, but I certainly did more than 10 later - to Russia and to other Eastern European cities where the Soviet Peace Committee would invite Western peace activists, large numbers of us - a whole plane full of us - at a time in about 1982.

Frank von Hippel

That was very significant period. There was this mobilization in both Western Europe and in the United States against the nuclear arms race. For my development, this was an important period. To see that, you know, that force was a real political force in the United States.

Metta Spencer

It really had had influence, I think.

Frank von Hippel

And I think Roald may be able to tell us that this had an impact in Moscow in the Gorbachev group, on feeling maybe the US was not just controlled by the military industrial complex.

Roald Sagdeev

Actually, that reminder of that period brings me back to a very intense moment. The reaction of different circles inside the Soviet elite to Reagan's speech. I have to confess that there were enthusiasts. The leaders of the Soviet military-industrial complex said: "Great, we will have something more to do!" Fortunately, Gorbachev came at that moment. And we knew that we were not alone. The idea of the terrible past of the arms race was shared with our American scientist counterparts. We were very successful to persuade Gorbachev to reject the attempts of the Soviet military industrial complex to follow the American precedent and establish a strategic defense initiative on the Soviet side.

Metta Spencer

Well, I want to hear about that, because I'm very aware that you were having a lot of influence with Gorbachev. And I think maybe that's the first time you maybe did have much political influence. Is that right? How did that work? it? Did you meet with him? Or did he reach out to you? How did you use any kind of influence in those conversations?

Roald Sagdeev

I think it started in in a rather accidental way. About a year before, Gorbachev became General Secretary when he was still a younger member of the Politburo. He was asked by the Politburo to make a trip to the United Kingdom to meet with Margaret Thatcher. So, he established a small delegation and a colleague of mine - Evgeny Velikhov - was invited by Gorbachev to join that trip. It was the first very successful trip and played a very important role later on when Thatcher explained to Reagan and the other Western leaders that Gorbachev is a new guy, a new face, and we can make a deal with him. We built some good connections between science and the future General Secretary. The very first thing we did was to prepare a manuscript explaining the dangers of following the line of missile defense. Frank knows this manuscript very well. We also used some advice from our American colleagues. It was delivered to Gorbachev and I believe it played an important role. Then, very soon after, Velikhov and I were invited to meet with Gorbachev and we were invited to accompany him to his very first summit with Reagan.

Metta Spencer

Oh, okay. And what happened there? What did you do while they were off by the fireplace having their conversation?

Roald Sagdeev

I think at the beginning it was rather easy to reach Gorbachev. Later, it was a little bit more difficult because of bureaucratic shielding around him. But I think Gorbachev firmly rejected

attempts of the military industrialists inside the Soviet elite to change his mind. He was very much against Star Wars. The first two summits - in Geneva in 1985 and in Reykjavik in 1986 - went under the stigma of Star Wars. And I think Regan did his own homework and later on he understood that it was important to come to an agreement with the Soviets. It was Reagan who first said: "Let's make a deal. Let's destroy and annihilate all the nuclear rockets."

Metta Spencer

I didn't know it was Reagan. Oh, my goodness.

Roald Sagdeev

It was at Reykjavik in 1986.

Metta Spencer:

I thought it was Gorbachev.

Roald Sagdeev

Gorbachev thought it was a great idea, but he had one condition: he would also refuse to talk about continuing with the Star Wars strategy. So, it took some time before both finally agreed. I think it was fall of 1987 when Gorbachev had a short summit in Washington DC. At that point in time, it was very important. Euro Rockets had been cancelled and were being destroyed. An agreement was done to eliminate them.

Metta Spencer

Okay. Now, Frank, where were you at this point? Did Reagan take a team of scientists with him to the to these summits? The way that Roald was taken to the first summit by Gorbachev?

Frank von Hippel

No. We had no interaction with Reagan. He might have taken his science advisor along. But it's very interesting what Roald is saying. In fact, my first interactions were actually with Gorbachev, not with Reagan. And it was thanks to the Soviet committee. It related to Gorbachev's first initiative after he became General Secretary, which was to announce a unilateral Soviet nuclear test moratorium and which is actually similar to what Khrushchev had done when he tried to get a Comprehensive Test Ban Treaty.

Metta Spencer

Is this when you worked on this seismic monitoring operation?

Frank von Hippel

Yeah. Well, that's one thing that came out of it. I think it was originally Velikhov's idea – when the Reagan administration did not reciprocate and stop the US testing – as to how to keep the initiative alive. And Velikhov had this idea that maybe we should invite somebody in to

monitor. Because some people in the Reagan administration were saying: "Well, maybe the Soviets are actually cheating. Maybe they're carrying out small nuclear explosions at their test sites." So, then Velikhov suggested to me that maybe we should try to invite in somebody or a group to monitor the moratorium.

Metta Spencer

Was Velikhov the one who proposed that?

Frank von Hippel

Yes, it was Velikhov who proposed that. I think Tom Cochran from the Natural Resources Defense Council also had that idea on the United States' side. He was one of the people that I invited to come to a meeting in Moscow in May 1986 to meet with Velikhov and discuss this idea. It was actually the NRDC which undertook the organizing of a group of American seismologists to come in and set up seismic stations around the Soviet test site in Kazakhstan. And that had a big impact in the United States, because of the efforts that Kennedy and Khrushchev had made to have a Comprehensive Test Ban Treaty had failed to stop nuclear testing underground as the Soviets did not want to have more than a certain number of in country inspections of suspicious seismic events. And the fact that the Soviet Union had unilaterally invited a group in to monitor their test site showed that things had changed. This was part of the nuclear glasnost that was pioneered by Gorbachev with Velikhov's and Sagdeev's advice.

Metta Spencer

I remember being at the office of Aaron Tovish who had gone with you on some of those trips. I remember he said that Ed Markey stood up in Congress and put up a big map and said: "Look here. This is where we have monitoring stations in Semipalatinsk. We have our people right there watching them." And this made a big impression on congress.

Frank von Hippel

It did. It took some time, but ultimately Congress said in 1992 that: "If the rest of the world stops testing, we have to too." And that was actually what got us to the Comprehensive Test Ban [Treaty].

Metta Spencer

So, you think that Congress had some important leverage in there? See, I'm surprised when Roald said it was Reagan who had proposed the cutback and making of a deal. I thought that Reagan had to be dragged there. But, if you're right and he actually spoke first along those lines, that sounds good to me. I'm glad to hear it.

Roald Sagdeev

Of course, Congress played a very important role. At that time, there were great Senators and great members of Congress who were fully understanding the dangers of nuclear confrontations. They were against Reagan's most extreme plans even before Reagan changed his mind. I think it was very important that by 1987 Reagan was ready already to move forward.

Metta Spencer

I guess an interesting question then is: "What really changed Reagan's mind?" I do remember I was on the plane coming back from Moscow while the film called *The Day After* was shown. It was a very important film that showed the aftermath of a nuclear war. And I believe Reagan said that was what actually made him really get serious about nuclear disarmament. I never saw the film because I was on the plane when it was screening. Was there anything like that going on in the Duma or anywhere else? My impression was that all of the power was in the Politburo and not elsewhere. How much popular resistance was there during that period in Russia?

Roald Sagdeev

I don't think I can compare Russian popular resistance to what was happening in Europe as we spoke of. In Europe, there was a really serious uprising with many big meetings, demonstrations against nuclear threats, and so on. In Russia, the government controlled the protests. Press the necessary buttons to organize the protests and so on. Even more today, you know, when Putin shows cartoons about new and more exotic nuclear rocket gadgets. The Duma stands up and collectively applauds. I feel nostalgic about the older times looking at what is happening today in Moscow.

Metta Spencer

I wish I had been able to invite Evgeny Velikhov, but I gather he is not well nowadays. I did have a conversation with him once about this. Frank, you worked quite closely with him, didn't you?

Frank von Hippel

Yes. He was a real hero in this period and in organizing these initiatives. I mentioned the monitoring project. He and Roald were very important in preventing the Soviet Star Wars. If the Soviets actually started their own Ballistic Missile Defense Program mirroring ours then I don't think we would have been able to stop the arms race going on into a new offense-defense direction. Also, during the Glasnost – which was an opening up – Velikhov organized a number of events. One ended up with a demonstration. Roald and I did a research project on whether you could detect nuclear weapon warheads and the issue was whether to include sea launched nuclear armed cruise missiles in the START treaty that was under discussion. The Soviets wanted to include them. The Reagan administration said: "Well, you can't tell the difference between a nuclear armed and a conventional sea launched cruise missile." So, Velikhov

amazingly got permission from Gorbachev to have an experiment demonstration of whether you could detect the nuclear radiation from a sea launched cruise missile off Yalta in the Black Sea. Roald and I had been supervising a theoretical research project on that question. And so, the NRDC - again with Tom Cochran – undertook an initiative to demonstrate this on the US side. But I found much more impressive what the Soviets did. Basically, in our case, we had people sitting on top of the launcher on this cruiser in the Black Sea, detecting gamma rays coming out of the warhead. But the Soviets had a helicopter with a neutron detector flying by about 70 meters away and they could detect neutrons.

Metta Spencer

Hold on. Let me make sure. You had an American destroyer?

Frank von Hippel

It was a Soviet destroyer.

Roald Sagdeev

Yes.

Metta Spencer

So, the Soviets were detecting their own radiation?

Frank von Hippel

Yes. That was the amazing thing. This is the only time foreigners have been allowed to measure radiation from any warhead by any country. And Gorbachev had enforced this on the Soviet nuclear establishment. Just to finish the story about the helicopter: later on, they told me that they had actually been flying this helicopter over US ships and detecting the warheads. I said: "They would never let you to get that close. Would they?" And they showed me pictures of the sailors on the US ships waving at the helicopter.

[all chuckle]

Roald Sagdeev

Probably little did the sailors know that there were gamma ray and neutron detectors on those friendly helicopters!

Metta Spencer

You know, I have to wonder... I remember you told me that story when I interviewed you 20 some years ago. But I've wondered ever since: gamma rays were shooting all over the place. You could fly over or get within some meters of them and detect them. Well, what about the

people on the ship? I mean that must not have been a fun place to be. Whatever happened to them? Wasn't it dangerous to have nuclear weapons shooting out gamma rays?

Frank von Hippel

The levels that you can detect are much, much lower than the levels of that do harm. So, I think the dosage to the sailors were probably less than the natural background dose from cosmic rays and so on. So, this means that one of the things that the helicopter had to make sure of was that it wasn't detecting cosmic rays, instead of the neutrons from the warheads.

Roald Sagdeev

This radiation is just like the radiation that contemporary gamma ray telescopes are getting from distant astronomical objects, like exploding stars and such. The biggest instrument like this is now on the International Space Station. Astronauts and cosmonauts help to use it. It's no problem.

Metta Spencer

Oh, okay. I've often wondered. Isn't it dangerous to be a sailor on a nuclear armed submarine? I wouldn't take the job myself.

Frank von Hippel

Well, I mean, in some cases, they actually have sailors sleeping on bunks over the stored nuclear armed cruise missiles. This isn't true anymore, because they're not deployed. That's a little close for comfort, I think. But the radiation levels are pretty low coming out of the warheads.

Roald Sagdeev

Frank mentioned some research we were doing and actually what happened at approximately the same time: Frank, with a little bit of my participation, established a major international scientific magazine: Science and Global Security. This was where all the researchers could publish their calculations and analysis of different things related to all this military stuff. I understand this journal is still prospering now.

Metta Spencer

No kidding. Well, that's really one of the things I was wondering which I'd hope we'd get to a bit later in this narrative. I mean, we're sort of going through a chronology and moving forward in time. But certainly, I wouldn't have thought there'd be much contact between scientists now - Russian scientists and Western scientists - on military matters. Is there or not?

Frank von Hippel

There still is. Roald, are you still involved with this?

Roald Sagdeev

Very rarely. I have been invited to webinars. I think maybe two or three times over the pandemic.

Frank von Hippel

But there are regular meetings between the committee at the US Academy of Sciences and the Russian Academy of Sciences.

Roald Sagdeev

Rose Gottemoeller is now running some of the sessions on the American side.

Frank von Hippel

Yes. And those meetings were quite important during the Gorbachev times when Richard Garwin - who was a great expert on all the ways that you could neutralize ballistic missile defense - had discussions under those auspices with Velikhov and another of Velikhov's committees, which was the Soviet Academy counterpart to the US Academy committee.

Metta Spencer

How do they manage their secrets? Both sides most certainly have lots and lots of military secrets. How do they draw the boundaries? When you're going to have a meeting, how do you plan it and how do you know whether you're going close to talking about something you're not supposed to?

Roald Sagdeev

I think all the people had a lot of experience. Some of the members of these committees were coming from the military industrial complex. I also remember there was always some kind of interaction with the Central Committee of the Communist Party. So, before we would go to meet our American counterparts, we would have to get advice from the Soviet government and so on. It was very important to have this interaction. Of course, what was most important was that the participants had an understanding of what could be discussed and what should be kept secret.

Metta Spencer

Were there - or even now are there - really important things that should be known for the sake of making progress with disarmament or rapprochement of any kind that are not known and cannot be shared? Are you worried about censorship and secrecy or not?

Frank von Hippel

Physics is not classified. And, so you can - without talking about the specific designs of specific weapons - talk about generic approaches to nuclear arms control. So, I think it's not that big of an impediment.

Metta Spencer

Okay. But let's say, before the Soviets developed their own nuclear bomb, there would have been a time when Americans knew how and probably would have been very, very cautious about talking to Soviet scientists, right? Because they might give away some information that might be helpful in speeding up the development of a nuclear bomb. Am I wrong?

Frank von Hippel

Yeah. But, the mantra of the Manhattan Project scientists - the World War II Manhattan Project nuclear program - when they came out, their mantra was: "There is no secret. There is no defense." Once it had been demonstrated that you could make a nuclear weapon, it was pretty straightforward.

Metta Spencer

Well, then it was a matter of time until it would be by others. But I think everybody was surprised at how quickly the Soviets developed it.

Roald Sagdeev

Yeah, I think by the mid-1950s, it was already clear that both sides were equally knowledgeable about all the things. It was not a big deal. Secrets were on the technical side, on the details. But at such meetings, we never spoke about any such technical details.

Metta Spencer

I see.

Roald Sagdeev

I remember there were several incidents when it was important to talk about some details. On the American side in the early 1980s, there was a kind of concern about whether the Soviets knew some particular tricks of how to stop a rocket that was accidentally launched while carrying nuclear weapons. The Americans were talking about a radio signal that could be sent to self-destruct and stop the rocket before it delivered any damage. I remember they were telling us about this and asking if we were familiar with such technologies. The name was PAL - I think Frank knows it - Permissive Action Links. This system can self-destruct something which was launched. So, we then asked the Soviet authorities if they were interested in such things and that the Americans could explain the principle. We got the answer: "Oh, don't worry. We also have a similar system."

Metta Spencer

I thought there really wasn't such a system. That once these things are launched, you can't call them back or can't undo it.

Roald Sagdeev

I think a probable trigger to develop such system was the famous movie Dr. Strangelove.

Metta Spencer

Yeah.

Frank von Hippel

These Permissive Action Links are codes that are like a combination lock in the weapon which are activated. In the case of missiles, I don't think you can, in fact, stop it. There was the concern that the Soviets might learn the code and then they could send the radio signal and prevent it. So, in fact, when the US has tests of nuclear missiles, it does have these systems in there in case the missile flies in the wrong direction. But, in the actual nuclear armed missiles they don't have these safety systems. Once it's launched, it can't be recalled. This scared a lot of people. It still does. And I think that was one of the motivations that Reagan had when he proposed the abolition of ballistic missiles. He wanted to go back to bombers, which you could recall.

Metta Spencer

Well, you can see the point. When do you feel things begin to fall apart? I mean, we know the history of the coup and all that, but I'm not sure from the standpoint of scientists. You had this strong interaction going on and cooperation. It sounded like you were the best of friends. But somehow that ended. I wonder if from your point of view, what was that landing like? Was that a hard landing? Did you sense things going wrong that that could have been fixed? What went wrong when the Happy Days of ending the Cold War stopped?

Roald Sagdeev

I think on the political front there was probably some kind of psychological feeling that was dominant in part of the American political elite. Triumphalism. "Oh, we have defeated the Soviet Union. We should not worry anymore." There was probably such a feeling. And this feeling or something else finally lead to George W. Bush's administration's decision to abandon the ABM treaty. I think this was one of the biggest blunders in post-Cold War development.

Frank von Hippel

There was also NATO expansion which really triggered off Russian paranoia that we were removing the buffer that they had created at the end of World War II to prevent an invasion. I think then Putin really sort of came in and we became enemies again.

Roald Sagdeev

I have an interesting story about the change in Putin's thoughts. Early in his presidency, Susan Eisenhower and I were invited to meet with him in Moscow. We had a private tea party at his dacha outside of Moscow. He offered to explain to us his vision of what's happening. He said:

"Look, we have a several thousand-kilometer-long common border with China. On the Russian side of the border, it's almost empty with very little population. The Far East of Siberia is at a great risk. This is why we need a real strategic partnership with the United States." Imagine, this [being said] in January of 1993. What's happening now is that he is almost embracing the Chinese.

Metta Spencer

Okay. What do you think flipped him? I never liked Yeltsin, but I don't think he was the one that turned everything sour. Looking back, I cannot reconstruct how things went from good to really pretty bad. I do know that the shock therapy thing seems to have affected public opinion in Russia, because I was going to institutes like the Institute of USA and Canada and so on. It used to be that everybody was so enthusiastic about meeting me or any Western academic. But within a few months, when I would go there and meet people, I was getting real personal hostility, as if I had personally caused the shock therapy. But this was also a time when I'd seen people selling their furniture and their clothing and their belongings out on the street for money or anything. So, clearly the shock therapy had a very bad influence on public opinion. But it is my impression that Yeltsin and Clinton stayed very friendly towards each other straight through. I kind of don't think that was the influence that really made for what looks like a renewal of the Cold War. I would like your thoughts on that period.

Roald Sagdeev

I think the chemistry between Bill Clinton and Boris Yeltsin was exactly like that. They often spoke privately. Recently, some of the documents related to their interactions were released and published in Russia. One particular detail that I remember is that Clinton was warning Yeltsin to prepare for the news that they were going to do something with NATO in Europe. Yeltsin's reaction was: "Can you please wait a few months? Because I am going for re-election. Please do not spoil my chance of re-election."

Metta Spencer

Well, he didn't have much chance of honest re-election anyway. But I've heard that Clinton sent people to help him. You know, election officials, who knew how to rig things.

Roald Sagdeev

The Russians call them political technologists. Those who know how to prepare for the elections.

Metta Spencer

Yeah. That didn't sound too good to me. Okay. Now you left Russia and you seem to be able to go back. How did they react when you - so-called, if you don't mind the expression - defected?

Roald Sagdeev

What happened? Velikhov later told me the whole story. The government created a special committee to evaluate potential leaks of national secrets. And Velikhov was a member of this committee. And he told me finally, after a number of sessions, they decided that the risk was zero because whatever this guy [I] knew was already obsolete and outdated.

Metta Spencer

Frank, do you remember that period and when things were on the downslide what was going wrong from your point of view?

Frank von Hippel

Well, during the Yeltsin period, I was in the White House for a year and a half. We were working on a cooperative program to help the Russians strengthen the security over their nuclear materials. So, things were still wide open there. But then after Putin came in, I think I made one trip to Arzamas [Arzamas-16] which was the second time I went. I actually went with my wife. We were invited and it was very difficult. They had difficulty getting us in. The idea of Americans visiting their sensitive installations was becoming very, very unpopular. And we could see that the security people around Putin were taking over and shutting down these sensitive visits. Roald would know whether a bubble formed around Putin where it became difficult for independent scientists to really have an impact at some point.

Roald Sagdeev

I think that reflects the story. Velikhov was still influential in the early part of Putin's presidency. I don't think so now. I have not seen him have serious influence during the last 10 years.

Metta Spencer

Well, when I talked to him, he was already sour on Gorbachev. And I wonder how much that kind of thing influenced public opinion and even the establishment. Toward the end of Gorbachev's period, they really thought he was messing up badly, especially with the economy and of course with the rise of these nationalistic movements. I don't know whether that was his perspective or not, but he was and some of the other people I met - like [Georgy] Arbatov - became quite critical of Gorbachev at a time when I thought Gorbachev needed a lot of help and support. I don't know what it was like for people talking among scientists though and how much that influenced cooperation with Western scientists.

Roald Sagdeev

I remember the days when and how Arbatov actually kind of slowly broke up with Gorbachev. And later on, Yeltsin appointed Arbatov as his advisor. I had almost a similar past in summer of 1988 because of some disagreement - not on science, but on internal political changes in perestroika. I also was excommunicated by Gorbachev.

Metta Spencer

Well, all right. So, there was a downhill slide. And it's kind of kind of sad. Very sad, because if you guys were still riding high, we'd have solved all our problems long ago. And I think we've come toward the end of our time. Is there anything anybody would like to add that we haven't covered? A recollection of any kind or advice?

Frank von Hippel

I'll just add that public engagement with nuclear weapons issues is much less now than it was at that time. I think it was because people thought that the problem and danger, with the Cold War over, was gone. And I think the danger has always been accidental nuclear war happening without anybody intending to. I think that danger is still with us.

Metta Spencer

Absolutely.

Frank von Hippel

So, we've been trying to remind the public of that.

Metta Spencer

Yeah, I agree. Thank you so much. This is wonderful. I've really enjoyed it. And I think somebody is gonna find this useful someday. Thank you both. It's been fun.

Roald Sagdeev

Thank you, Metta. Keep going on with your program.

Metta Spencer

I will.