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Interview with Matthew Bunn

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Summary:

In this interview, Matthew Bunn reflects on his career in nuclear security, highlighting how his focus shifted from arms control to nuclear materials security. He emphasizes the importance of securing nuclear materials globally to prevent nuclear terrorism, describing the successful establishment of initiatives like the IAEA Nuclear Security Fund and the Global Threat Reduction Initiative. Bunn also addresses the complexities of disarmament, stressing the need for interim security measures to manage nuclear risks while working toward long-term disarmament goals. He argues that meaningful progress in nuclear policy requires collaboration between governments and civil society, especially in areas where policy is less established. This document summary was generated by an artificial intelligence language model and was reviewed by a Wilson Center staff member.

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Michal Onderco: Thank you very much for being part of the project, and for agreeing to answer my questions. I always start by asking respondents: how did they become interested in the topic of nuclear weapons?

Matthew Bunn: So I went to college at the height of the Cold War. People were all... especially as the Carter administration shifted to the Reagan administration, people were terrified. The nuclear arms race, the possibility of nuclear war. And when I was, either a freshman or a sophomore in college, I took a course on nuclear weapons. And I thought: "gee, that's pretty interesting." And I got a summer job with that faculty member doing some research. And that project, summer project, ended up taking me three years. And by that time, I was sort of well advanced, and learning about nuclear weapons, and nuclear technologies. And ended up doing my bachelor's and master's degrees at MIT focusing on nuclear arms control issues. And then went off to Washington and have spent my career doing those things since then.

Michal Onderco: People who work on nuclear weapons, many of them sort of go into government and then spend all their life in government, some go and do like hardcore activism. Why did you choose this career at the interface of policy world and academia?

Matthew Bunn: So I think a lot of what happens in life is has a random quality to it, or random elements to it anyway. So I was in academia, doing my master's degree, it was already clear that my focus was sort of at the intersection of technical issues and policy issues. And I thought I should get a job in Washington somewhere where the real decisions are getting made. It was the Reagan administration, and so my instinct was unlikely that they would hire me doing anything that I was especially interested in doing in the executive branch. And my instinct was that it would be hard to get a job in the legislative branch without knowing anybody in the legislative branch. So I was thinking about getting jobs with non-government organizations. And at that time, there were only really two non-government organizations that were focused on arms control and had some interest in technical aspects. And that was the Federation of American Scientists and the Arms Control Association. And so I was idly thinking to myself that I should talk to those organizations about whether I could get a job. And my phone rang. And it was the President of the Arms Control Association offering me a job. And so it turns out that he had talked to my thesis advisor, and said: "we desperately need someone to work on sort of technical aspects of missile defense." And my thesis advisor said: "well, we have this Matt Bunn guy sitting around, you can try him." And so I was sort of "that was easy", and I went off to the Arms Control Association. So I worked there for a while, and became, among other things, editor of Arms Control Today. And that gave me a decent background in most of the key nuclear arms control issues. But one thing I really didn't know much about was nuclear material and the nuclear fuel cycle. So I thought I should do something about that. And, as it turned out, the National Security Council asked the National Academy of Sciences to do a study on what should we do with all the plutonium from dismantled nuclear weapons? My boss at the Arms Control Association was a member of that committee, and sort of suggested me to that committee. And so I went off and directed a study on... so the one aspect that I thought I knew the least about ended up being most of the remainder of my career. And from the academy, I got loaned to the Office of Science and Technology Policy in the White House, spent several years there, and then came to Harvard from there.

Michal Onderco: I mean, of course there are the policy questions are slightly different. But do you do see how the world deals with nuclear weapons and the world deals with nuclear materials, are these

completely different sort of academic scientific communities? And also, do they work differently? Or are they only divided by the topic?

Matthew Bunn: I would say they're pretty different communities. And one thing that happened in the course of the Nuclear Security Summit process was those communities sort of got mixed together, in the non-government world anyway. And you had a lot of interest the wanting to participate in some way in the Nuclear Security Summit process, among groups that were basically disarmament groups, and new to first approximation. Nothing about how security for actual nuclear facilities, nuclear weapons, nuclear materials, work. And then there were a fairly modest number of us who actually had experience with how security for nuclear weapons, materials, and so on worked. And so there was sort of interesting intellectual and political tensions, I would say, between people whose main instinct was disarmament, let's get rid of all of these nuclear weapons. And people who were sort of saying: "yes, disarmament is important, but it's a separate topic, from how do we make sure these things don't get stolen, or sabotaged." And that tension, I would say, continued more or less continuously through the Nuclear Security Summit process.

Michal Onderco: Another question that I ask every interviewee is: how do you view the role of nuclear weapons in the world today?

Matthew Bunn: Well, I think if you look compared to 10 years ago, almost every situation that creates a risk of nuclear war is worse than it was 10 years ago. If you look compared to 50 years ago, that may be a different story. But, compared to 10 years ago, you have much higher US-Russia tensions, obviously a war in Ukraine that raises the possibility of nuclear use, much higher US-China tensions, China building a much larger nuclear arsenal, ongoing tensions with North Korea, North Korea with a much more capable nuclear and missile arsenal than it had before, Iran right at the edge of a nuclear weapons capability. So it's a much darker nuclear picture. Broadly, I think nuclear weapons are mostly deep in the background of international affairs. Most of the day-to-day of international affairs has nothing to do with nuclear weapons. But the shadow that they cast does affect a lot of things. Would US behavior in Ukraine be different if Russia didn't have any nuclear weapons? Absolutely. Would Russian behavior in Ukraine be different if the United States, France, and the UK didn't have any nuclear weapons? Absolutely. Would Ukraine's behavior be different if Russia didn't have any nuclear weapons? Probably, because the United States and Ukraine's other allies would have different policies. Would Russia's behavior be different if Ukraine did have nuclear weapons? Probably so. So nuclear weapons, I think, fundamentally shaped the war in Ukraine from fairly early on.

Michal Onderco: If you look at them, and if you look at the role of nuclear weapons in abstract, would you say that they are fundamentally stabilizing or destabilizing?

Matthew Bunn: Well, nuclear weapons do deter, in my view, states from attacking each other with nuclear weapons. or leading sort of mass scales, state-threatening invasions of other nuclear-armed powers. But they come with the constant risk of catastrophic failure. So we have this tool that states use, ostensibly, to promote their own security and that of their allies. But that comes with it, this absolutely horrifying security risk of potentially wiping out major portions of the human population and much of the civilization we've built up over 1000s of years.

Michal Onderco: If you look at the period since the end of the Cold War, what do you see as the biggest failure in the field?

Matthew Bunn: I think there was a real failure to build a fundamentally transformed arrangement for International security after the collapse of the Soviet Union, at the end of the Cold War. I think that there was an opportunity, potentially... I don't know if this would have worked, to build a security structure for a Europe that really integrated Russia, as opposed to a security structure for Europe that was seen by Russia as a threat to Russia. I think it's wrongly seen by Russia as a threat to Russia. In a way, it's sort of darkly comic that Russia has been demanding that NATO roll back to the 1997 lines, because if you look at the armor that NATO had in 1997, Russia doesn't want NATO to be back there. They had a much more impressive, offensive military capability in 1997 than it does today. But it was a lot farther from Russia's borders in 1997, there's no doubt about that. And Russia has a paranoia, born of hundreds of years, of cases where it was invaded. And it has a president who combines paranoid, megalomania, willingness to use violence on a large and unrestricted scale. A pretty dangerous combination which seems to have gotten a lot worse over the years as his time in office has continued.

Michal Onderco: And who do you think is to blame for that failure? You don't have to pinpoint the person but you can pinpoint...

Matthew Bunn: I think in most historical situations like that, there's plenty of blame to go around. I think the United States could have nudged harder toward really a integrated security system. I think the Europeans could have nudged harder toward a really integrated security system. I think, obviously, Russia could have behaved better. But it's not just in the Euro-Atlantic region. I mean, obviously, we now have a situation where the North Korea problem is completely out of the tube as ElBaradei used to say, when he was head of the IAEA. And the US-Chinese tensions are dramatically higher than they were back then. And so there have been failures to build really different and more cooperative structures of international security in many parts of the world. I will say that while American security officials don't usually think about this, there are parts of the world that handle their security perfectly well without nuclear weapons. and without relying on other states nuclear weapons. Latin America being an obvious example, Africa doesn't handle its security as well as Latin America does, more wars, and so on. But still, most states in Africa considered themselves secure, and don't have any need or interest for nuclear weapons. The vast majority of the world states understand that they're better off without nuclear weapons.

Michal Onderco: Why do they think that this is different in places like South Asia, the North Atlantic area, so including Western Europe, and US, and Russia, East Asia? Why do you think that these regions are different than the rest?

Matthew Bunn: Well, my first guess, would be historical tensions and histories of war. I mean, modern Europe was sort of born in World War Two. In a horrifying war, that left Europe divided between East and West. And nuclear weapons were seen on the US side, at least, and in Europe, and in Western Europe, as sort of essential protection against the possibility of Western Europe being overrun by Soviet and Soviet allied forces. We now think that those fears were overblown, but they were very real fears at the time. And to be honest, most of the things that the United States did during the nuclear age that were most dangerous, had to do with trying to make extended deterrence credible. Fundamentally, it's not very credible. That, as De Gaulle put it, we would really sacrifice Washington for Paris? And so trying to make that promise credible, has led to things like at one time 1000s of nuclear weapons deployed on European countries, plans to use nuclear weapons early in the defense of Berlin.

In retrospect, the notion that United States was totally prepared to get a nuclear war over one half of one

city, half a world away, seems hard to explain. But that's the reality. So I think in East Asia, similarly, there was... fears of China were quite real. The division of Korea, and the aftermath of the Korean War created fears and tensions that were quite real. I think in the Middle East you have legacies of war, and fear, and tensions that are quite real. I think it's places where the possibility of a state being totally overrun and conquered seems like a real thing to worry about, are the places where people have build nuclear weapons.

Michal Onderco: And if you look at this failure to build more cooperative relations that you mentioned, do you think that there is a particular role that the civil society could have played in sort of bringing about that desired state?

Matthew Bunn: So I think civil society did play a big role. So if you look back at the 80s, there's a lot of really interesting conversation and discussion about ideas like defensive defense: can we put together security military forces that really are highly effective in defending, and have almost no offensive capability? Ideas about cooperative security, were many of them being generated in the civil society space. But there are limits to what civil society can convince governments to do. And in particular society raises up most when governments are proposing to do something that many in the public are totally opposed to. And so the fears of the arms race, and the fears arising from the deployment of INF missiles in Europe in the 80s, that led to 10s, or hundreds of 1000s of people in the streets in Europe, half a million or a million people on the streets in New York, in the United States in the Freeze Movement. That really gave civil society a political power that it hasn't had subsequently. For most of the subsequent period, because civil society was unable to deliver huge numbers of votes, huge political pressure from people in the street, civil society... people like myself, I've been much more playing the inside game, coming up with ideas and advising particular policymakers and trying to convince them to adopt those ideas, much more than bringing sort of political pressure on them from the outside. And there are many things you can do with the inside game. You probably can't do very transformative things with the inside game, would be my guess.

Michal Onderco: So one of the things that sort of puzzled me is that, for example, in Europe, you have still 120 nuclear weapon stationed. I think that's the estimate, according to Federation of American Scientists.

Matthew Bunn: I'm not going to comment on that estimate.

Michal Onderco: And if you ask in surveys, people's questions about what they think about it, it's been quite unpopular, at least in the last 20 years or so.

Matthew Bunn: It will be interesting to see how those survey numbers may have changed in the last years since the...

Michal Onderco: I have a paper on that actually. I can send you a paper on that if you're interested. So, but in the past 20 years, before the invasion, that has been the pattern. And many civil society leaders have been asking: so if they are so unpopular, how come the politicians haven't actually taken the step and done something about it? And if I understand your theory correctly, it's because these are not electorally salient.

Matthew Bunn: Correct.

Michal Onderco: Okay. I want to move on to a different question, which is: imagine someone reads this interview in a bunch of years. What do you think they need to know about what's the role of Belfer Center in the nuclear civil society landscape in the US in 2023?

Matthew Bunn: In 2023, I have to say...

Michal Onderco: Or in the 2020s.

Matthew Bunn: Yeah, in the 2020s. I think that the Belfer Center's role is several-fold. I think, perhaps the most important is just generating people who then go into government. So, the Under Secretary of State for International Security and Arms Control is a former fellow in my program, the Principal Deputy Assistant Secretary of Defense, in charge of nuclear weapons and space policy, is a former fellow in my program, The ambassador to the IAEA came from the Belfer Center, the Israeli ambassador to the IAEA came from the Belfer Center. So just generating people with a set of ideas who go into government is a key role. Another key role, of course, is generating ideas in real time: "what should we do about x? What should we do about y?" And the Belfer Center will generate memos, that people outside the government mostly don't see. And go down and make suggestions, advise, etc. A third important role, I think, is helping to generate support for particular positive initiatives, or opposition to particular negative initiatives.

Michal Onderco: Can you give me an example?

Matthew Bunn: Absolutely. So years ago, one Deputy Secretary of Energy estimated that there was about 500 million a year being spent, as a result of my work, making suggestions about nuclear security. I think that was an overstatement, even at the time, and it's certainly a much smaller number now. But I think it's not zero. I am one of the only non-government people who will go to congressional staffers and say: "this is why this particular program needs another \$20 million this year. This is why this particular program needs another \$50 million this year." And so on.

Michal Onderco: Why do they listen to? Why do you think they listen to you?

Matthew Bunn: Because of a long-standing reputation as someone who treats these things seriously. And because of access to the media. If you're trying to do this stuff without ever being sort of out there in the media, you're going to get somewhat less attention from policymakers than if... I'll tell you one amusing story. At one point, this is again quite a number of years ago, I was on the National Public Radio, morning show, morning edition. And I mentioned a particular program that didn't have enough money for implementing improvements and nuclear security around the world as rapidly as it could otherwise be done. And as it happened, the chairman of the House Appropriations Committee, was commuting to work, and listening to this interview and arrived at the office and told his staff to add \$15 million to that program. Now, that's easier than it usually is.

Michal Onderco: So let's say that you think that there is a certain program, that should get \$50 million extra. And you don't accidentally talk on NPR. So would you normally just pick up a phone and call a congressional staffer and say: "hey, I need to talk to you about this program."

Matthew Bunn: So usually, we would do some kind of an analysis, we would write at least a short memo that said: "this is the money they've got leftover from last year. These are what we see as the opportunities for things that could do this year. If they took this somewhat different approach, then

that would require the following amount of additional money. I know, this is just a guesstimate of how much it would be. But given the importance, it's worth putting some more resources in there." That's the kind of argument we would typically make in a situation like that. And one of the key things is to develop relationships with the key policy makers over a period of time. I remember, years ago, when Senator Domenici, the Republican from New Mexico, was the chairman of the relevant Appropriations Subcommittee that oversees the budgets for the Department of Energy. I was talking to one of his staffers about a particular issue, and another staffer came in, and he was introducing me and he said: "this is Matt Bunn, and he's been helping the senator with his nuclear initiatives for a long time." And I thought "yes, that is how I want to be seen in Senator Domenici office." So one key aspect of playing the insider game is that you have to be seen as a helpful, well-informed person. It's very difficult to play on the barricades opposition role and the inside helpful advisor role, at the same time. There are moments when people have succeeded in doing that, but it's very, very difficult to do. Usually you have to make your choice of one or the other.

Michal Onderco: And so sometimes I speak to interviewees. And they told me that the whole nuclear safety agenda, and the Nuclear Security Summit process is just a distraction from the real goal, which needs to be nuclear disarmament.

Matthew Bunn: So that was absolutely the view of these disarmament groups who had never really worked on nuclear security. And my view is: there are multiple risks in the world, and we need to work on all of them. And I think they were vastly understating the genuine risk that terrorists could get hold of nuclear material and make a crude nuclear bomb. I think that they were, to my distress, overstating how much was politically plausible to accomplish on the disarmament front and how much what could be accomplished on the disarmament front would actually reduce risk, with respect to the risk of nuclear war. One of the things we're doing now at the Belfer Center is leading a global research network on the theme of rethinking nuclear deterrence, with several working groups, people from dozens of institutions all over the world.

Michal Onderco: I'm a member of one of them.

Matthew Bunn: Ah, okay. And, to my mind, there are really sort of two big questions in that zone of rethinking nuclear deterrence. What is the disarmament question, in a sense, sort of how do we get ourselves out of this mess? As the American nuclear strategist Fred Ikle asked decades ago: can nuclear deterrence have a happy ending? His answer, I think was the wrong answer, it was missile defense. So that's one question, how do we get out of this mess? The other question is: how do we stay alive until we get there? And so the issue of how do we reduce the risk of nuclear war in the relatively near term, even as we're working towards disarmament in the longer term, is, to my mind, a very salient question. But that doesn't mean that we no longer have an issue of how to reduce the risk of nuclear terrorism, or the risk of the spread of nuclear weapons to additional countries for that matter.

Michal Onderco: I want to come back a little bit to this question about the positioning of Belfer within other institutions. So in the course of my project last week, I spoke to people at Princeton, at the SGS. I have spent some time at Stanford, today I've spoken to people who fund the Stanton Nuclear Fellows. What do you think makes Belfer different from these other groups? So let's say Stanford, or Princeton, or any other of these...

Matthew Bunn: Well, first of all, both Stanford and Princeton are doing fantastic work. And we do a lot of cooperative efforts with them, probably not as much as we ought to be doing. But still, they do great work. I don't want to say that we do things that they can't do or whatever. I think historically, my group especially at Belfer, has done a lot more on this sort of security for nuclear weapons and materials agenda, the sort of preventing nuclear terrorism agenda. Historically, the Princeton group has been especially focused on the sort of technical aspects of verification and of management of nuclear materials. I think the Stanford group has done arguably more fundamental, in an academic sense, work. I would point to things like David Holloway's classic book on Stalin and the Bomb, Scott Sagan's classic book on the limits of safety, and more recent work as well. I would say a lot of our work has been less: how should you think about the problem, and more: what should we do in the next six months? But all of those groups have done some of both of those flavors of thing.

Michal Onderco: So correct me if I'm wrong, but to my mind, some of that work of what should we do within six months is also done in many of the think tanks on Massachusetts Avenue. So what's then the difference between the work that is done here and the work that is done at let's say, Carnegie Endowment, or at Brookings, or at CSIS?

Matthew Bunn: So, again, I would say they're doing terrific work. And we've had collaborations with each of those over the years. I would say that our work is actually quite comparable, in some respects to some of what is done at the Carnegie Endowment, or at Brookings. I would say those are a little bit different than, say, the Arms Control Association or something like that, that's more advocacy-oriented. I'm also on the board of the Arms Control Association, so I don't want to say anything negative about them either, spent a good chunk of my career there. I do think we have a little bit more of an academic flavor and sort of understanding the fundamental theory of what's going on flavor than some of what they do. So for example, one of the leaders of the group is Steve Miller, who's the editor in chief of International Security, which was the highest cited journal in international affairs. And my fellows fairly regularly write pieces that add up in international security. And that would be significantly less true at Brookings or what have you.

Michal Onderco: Do you have any interaction with any of these more activist groups, as you mentioned? So the groups that have sort of more...

Matthew Bunn: Yes, I think it's important for the different parts of civil society to collaborate with each other, to understand each other's roles. There is often a little bit of everybody thinking that what they do is most important. The more advocacy-oriented groups thinking that the more academic groups are off in their ivory tower, and don't know what the heck is going on, and have no influence, and so on. And the more academic groups that think the advocacy groups don't really understand the fundamental nature of the problem and aren't really going deep in sort of understanding what's really happening and etc., I think we'd all be better off if we gave each other credit for the things that we're good at, and collaborated more.

Michal Onderco: So what do you think these advocacy groups are really good at?

Matthew Bunn: They're good at what they do. So take, for example, the Arms Control Association. Again, I'm biased, I'm on their board, I used to work for them. They follow in depth, day to day what's happening on New START, and Russian compliance, and US policy toward it, and what's happening with the Iran nuclear deal, and other options for Iran, and what's happening with North Korea and all the

key arms control issues of the day. And they come up with suggestions that they make to policymakers, they interact with policymakers frequently. And they are operating at a level of sort of current day to day specifics knowledge, that is beyond what somebody sitting in academia is going to have. On the other hand, they don't spend a lot of time reading old deterrence literature and thinking: "how could we update it for the 21st century?" And so on. So both of those are important roles. And one thing I would suggest that you might want to think about in your role of civil society project, is coming up with categories of the role of civil society. Because I think there are quite different categories that are sort of the generating people, there's generating ideas, there's generating pressure to adopt those ideas, or at least there's shaping understandings and shaping the debate. There's also conducting dialogues, that's one thing we haven't really talked about. There's a lot of evidence that these sorts of back-channel dialogues, over the decades had a huge impact on arms control, and so on. The idea of a treaty banning missile defense was first discussed in US, Soviet, China, back-channel conversations. The key ideas for the IAEA safeguard system were first discussed and back-channel discussions of that kind among scientists. So there's a lot of things that happen in those back channels, where people who don't have to represent the current policies of their government, have a lot more freedom to raise ideas, to explore issues, and so on, than representatives of governments do. And that can be very useful to governments, I am still a participant in the US National Academy dialogue with the Russians. And that committee also has a dialogue with the Chinese and a dialogue with the Indians. And in the case of the Russia dialogue, I think it's just about the last senior level dialogue on nuclear weapons going. And both governments have asked us to continue. And we've explored... I wouldn't say we've resolved, but we've explored a lot of the key ideas that would be needed for the next round of nuclear arms control: what do you do about the strategic limits? Is there a way to limit all nuclear warheads? What do you do about INF now that the INF Treaty is good? What do you do about missile defense? What do you do about space? What do you do about precision conventional weapons? What do you do about China? All of those are issues that are probably going to have to be at least considered and probably addressed in some way for a serious next round of arms control to actually work. So even in the absence of a war in Ukraine, coming up with the next round was going to be a huge, difficult, complicated...

Michal Onderco: Hasn't the Senate requested that all nuclear weapons will be included in the next one?

Matthew Bunn: Yes. And you can imagine that Russia is not especially excited under current circumstances about limiting its tactical nuclear weapons. Russia relied on its tactical nuclear weapons because of its fears, as a result of NATO coming closer and closer. And now, its conventional weapons have been revealed to be much weaker than people thought, and then had been weakened further by the war. And so presumably Russia will be relying on its tactical nuclear weapons much more in the future than they were before, which is a depressing thought. On the other hand, Russia is concerned about US upload potential. And the United States has a lot of reserve strategic weapons, that could potentially be uploaded. And so you could imagine that a cap on all nuclear weapons would force each side to sort of... the United States would have to tradeoff between deployed strategic reserves strategic, and Russia would have to tradeoff between deployed strategic and non-strategic. So it seems plausible, but on the other hand, the real worries about the risk posed by Russian tactical nuclear weapons, wouldn't really be addressed by plausibly negotiable arrangements. It's not like Russia is going to agree to get rid of its debt called nuclear weapons in the near term. So we're going to be

dealing with real dangers arising from Russian tactical nuclear weapons for a while, certainly for as long as Vladimir Putin remains in his office.

Michal Onderco: Yeah, I mean, we can talk about that later. I've been involved last year in the project that tried to look for potential verification mechanisms for any sort of arms control agreement. And one of the things I sort of took away from it is that the technical issues are the easier ones in an agreement like that.

Matthew Bunn: Yes, and no. I have long felt that at least some of what we were doing in, for example, the International Program on Nuclear Disarmament Verification, was a little bit misplaced, in that, yes, it's an interesting technical challenge. How do you verify that an object presented as a warhead is, in fact, a warhead? Does anybody think that's how the cheating would happen? I mean, the really hard problem is, how do you know there are 300 that aren't presented? And that are hidden away somewhere. And I feel as though we need deeper thinking on those problems.

Michal Onderco: And do you think that these international initiatives like the IPNDV, are they up to the scratch to answer the questions that they're supposed to answer?

Matthew Bunn: I think they have a variety of important positive effects. Whether they can go all the way to answering the questions they're supposed to answer is another question. But I think that putting together a genuinely international set of people to really think about disarmament verification seriously, is valuable in itself. For both reasons of building foundations for future action; and political reasons, along the lines of showing that you're not ignoring the subject of disarmament entirely.

Michal Onderco: If I speak to people active on nuclear disarmament in Europe, one of the things that they often tell me is that their government supports IPNDV. But that they think that this is sort of....

Matthew Bunn: Window dressing, we would call it in the United States.

Michal Onderco: Exactly, it's a diversion path. And the government's do it on purpose, because they want to divert from the fact that they're actually not doing a lot on disarmament.

Matthew Bunn: So I think that advocates of disarmament often interpret almost everything governments do, other than getting rid of all their nuclear weapons, as a diversion. I would argue there are real problems in the world right now that need to be addressed. And that addressing them is not a diversion, but in fact, is essential for keeping things together until we can get to disarmament. But it is certainly the case that officials in the US government who were thinking about IPNDV originally, realized that the US government wasn't going to be eliminating all of its nuclear weapons anytime soon, and had an obligation to be pursuing disarmament. This was seen as one thing that we could do. Is doing one thing we could do a diversion? I suppose it depends on your political perspective and part. But I think also for the Europeans, the question is: what can those governments do that really would contribute substantially to eliminating nuclear weapons? The concept of the Ban Treaty is to generate enough political pressure on nuclear armed states that they will ultimately take action toward disarmament. And that seems like at least vaguely plausible path for the democratic nuclear arms states. But the Ban Treaty proponents have no strategy as far as I can see, for disarming Russia, China, or North Korea. And it's not at all obvious to me that a world in which the United States, France, and Britain are disarmed, and they aren't, is a better world.

Michal Onderco: So if I posed that question to people from ICAN, for example, their argument is: Americans, or the French, or the British will never allow them to be disarmed, while Russia, and China, and India do [keep the weapons]. And when the pressure gets sufficiently big, on UK, US, France to actually disarm, they will actually bring Russia and China to the table and push them and force them to negotiate nuclear disarmament.

Matthew Bunn: That grossly exaggerated our influence over Russia, and China, and North Korea for that matter. I mean, if you were Vladimir Putin, given the conventional forces he has...

Michal Onderco: That perform as they do.

Matthew Bunn: That perform as they do, would you get rid of your nuclear weapons?

Michal Onderco: I don't know.

Matthew Bunn: I mean, I think we're going to need some very different, getting back to the beginning of our conversation, more cooperative structures of international security, if we're going to get to a world where states are willing to give up their nuclear weapons. For better, for worse, there isn't any UN army that's going to take away the nuclear weapons from states that have them. And so we won't achieve disarmament, until all of the states that have nuclear weapons conclude they'd be better off without them. And there's not a one of the nine states that believes that today. And part of that better off assessment will be political, and moral, and ethical. But part of it is going to be "will my security be better off?" And so we need to convince the states that have nuclear weapons, that maintaining them is more dangerous than they currently think it is, and then getting rid of them as less dangerous than it currently is.

Michal Onderco: You mentioned the Ban Treaty. And the Ban Treaty is comparatively more popular and more prominent in Europe than in the United States. If, for example, the Dutch parliament is going to have a hearing on nuclear weapons, as it did two years ago, it will invite seven proponents of the Ban Treaty and people who are not proponents of the Ban Treaty. And for me, the question is: why do you think that the Ban Treaty or ICAN has not done such big inroads in the US?

Matthew Bunn: Well, of course, they would say: "oh, we've got all these City Council's passing resolutions." Has that any effect on anything? Sorry...

Michal Onderco: Well, they would say, for example, that you have big pension funds who are divesting from investing in companies that are active in the nuclear weapon enterprise. So, you have...

Matthew Bunn: And we have a more than \$1 trillion dollar program to modernize every aspect of the US nuclear arsenal. I mean, it's an interesting irony of history that the President who won a Nobel Peace Prize for his soaring disarmament rhetoric, is the same president who laid out a more than trillion-dollar program to modernize US nuclear weapons to last for many decades to come. I think that in states that have nuclear weapons, it is fairly easy for people who argue for less, to be ridiculed as endangering the national security. And that's true in France, and it's true in the UK, and it's true in the United States, and it's true in Russia, and so on. And I think those who are advocating change, need to make the case better, that the change they're advocating actually improves their nation's security. And that what their opponents are advocating, is actually what endangers national security. Because I think that's going to be essential for winning the argument overall. In particular in the United States, I think one important role for civil society in the next little while, is rebuilding the case for nuclear arms

control. There is a lot of us that just assume that, of course, nuclear arms control is a good idea. But there's a major faction of the nuclear security establishment that doesn't believe that, and has been chipping away at the rationale for nuclear arms control for many years, arguing that it hasn't really made any difference in reducing the risk of nuclear war, or reducing cost. and that Russia always cheats, and so on. And Vladimir Putin has been helping them make their case by violating agreement after agreement. So I think there's some real intellectual work, and some real sort of public education work, and elite education work to really rebuild the case for nuclear arms control. One thing that has happened over the years, during the Cold War all of the US nuclear security establishment understood that the preeminent goal of American policy was to avoid nuclear war...

Michal Onderco: But there were people in the 70s who said that nuclear war can be fought and won.

Matthew Bunn: Keith Payne in particular. Nuclear war "Victory is possible" is the title of one of his articles in Foreign Policy. And some of those voices are coming back, Keith Payne remains a serious player in US strategic thinking, and there are other voices of that kind. I was talking to a senior government colleague a few weeks ago who said to me: "the conversations about how many millions of deaths are acceptable damage, are happening again." Anyway, overall though, to be considered a serious national security person, was to know about nuclear weapons, missiles, arms control - what the heck throwaway it was and why it might matter etc.

Then when the Soviet Union collapsed, the vast majority of people thought that the nuclear danger had gone away. And to the extent anybody was worried about nuclear weapons, it was in the context of, quote, "rogue states", unquote, or terrorists. And those of us who were nuclear experts got shunted off to the side and ignored by the serious foreign policy people. And as a result, various decisions were made that, without really thinking very much about how is this going to affect the risk of nuclear war with Russia, or the risk of nuclear war with China, or what have you, whether it was NATO expansion, or the invasion of Iraq, or what have you. Now we have, for the first time in decades, major power war in the middle of Central Europe, and trenches, and tank warfare, and the whole thing, and the possibility that nuclear weapons would be used. And by complete coincidence, the United States has a president so old, that when he learned about foreign policy, it was all about avoiding nuclear war. That was the main thing. And so he's telling his staff avoiding World War III is the key goal.

Michal Onderco: Is that a good thing? Or is that a bad thing?

Matthew Bunn: It's a very good thing right now. I was not necessarily an enthusiast for having such an old president, because I didn't realize that we were going to have a major war in Europe. But I think, if you look back, for example, at the Cuban Missile Crisis, a key element of resolving that peacefully was that both Kennedy and Khrushchev had lived through World War Two, the memory of the horrors of World War Two. And the imagination of the horrors of such a war fought with nuclear weapons were vivid, lived realities to them. And for today's leaders, they don't have the same attitude about nuclear weapons. and Putin in particular, Biden does to some degree, But Putin in particular does not have the same attitude toward nuclear weapons. He sees them as policy tools that he can use, and potentially even for warfighting if it doesn't escalate beyond a certain level. And that creates a different situation.

Michal Onderco: You already started talking about the future. And I wanted to ask about where do you expect the nuclear field to go in the next 15 to 50 years? And some people find this question easier to answer when I say, Do you think there will be nuclear weapons around in 50 years?

Matthew Bunn: All right, so 50 years is 2073? I would say yes, but not 100% yes, I would say if I were betting a three quarters chance there'd still be nuclear weapons in 50 years. On the other hand, you may have seen that Vipin Narang and Scott Sagan have a new edited volume, *Delicate Balance of Terror*, in which they say everything is changed, and things are much more dangerous. Now, both Vipin Narang and Scott Sagan are friends of mine, I think both of them are geniuses, in nine cases out of 10, I would say they're smarter than I am. But I disagree on the basic argument of that book. I think, first of all, there is change in the system. There's no doubt about that. There are evolving technologies, evolving geopolitics. But the fundamental structure of the problem created by the fearsome, explosive power of nuclear weapons is the same. And I believe that core nuclear deterrence, the incentive of nuclear armed states not to get into the business of lobbing nuclear weapons at each other, is going to be very strong. And so I think our chances of avoiding large scale nuclear war and incinerating the planet are good. But given the gigantic consequences if we fail at that, it's worth a lot of smart people spending their whole careers, trying to make our chances better, and better, and better, and better, and try to eventually get rid of the risk. So if you think about it from a purely mathematical point of view, if you have a probability that gets repeated every year forever, eventually, that accumulates to 100% probability, even if it's very small each year. But it doesn't accumulate to 100% if you cut it off at some point, or if it's continuously declining in probability. So that's why, to avoid nuclear war, we need to reduce the risk as continuously as we can, and cut off the risk at some point.

Michal Onderco: So why do you think it accumulates? Because I would think about it more in terms of every year you roll the dice: are you going to have a nuclear war or not? And it's a sort of 100 side dice, and you have side that says war, and ninety-nine sides that says no war. And so if you roll the dice...

Matthew Bunn: Each year, your probability is the same. But if you keep rolling, eventually, the war one is going to come up. That's what I'm saying. If you roll it an infinite number of times, there's 100% probability the war one will come up at some point. So the way to make sure it doesn't get to 100%, is to be reducing it each year. So that you have 200 sided one year, and then a 300 sided, and eventually to stop rolling the damn dice.

Michal Onderco: The question that we already started to started talking about, but I want to go into it in more detail, is: imagine there is a disarmed world, so the world without nuclear weapons. How does the security arrangements in such world look like?

Matthew Bunn: So it's a great question, and one that I would argue, needs a lot more exploration, especially for the modern world. I mean, there are things people wrote about that in some detail back in the 50s, 60s. The more recent things, maybe I'd missed it, but I haven't seen a lot of really good exploration of that.

Michal Onderco: I think there was some work... Campbell Craig and Harald Muller have separately written papers that they basically say: you can't get to such a world without a world state, basically.

Matthew Bunn: So that has been one argument throughout the nuclear age, that the inevitable end of this dilemma is world government. I think world government is going to be extraordinarily difficult to achieve and that we ought to be exploring systems of international security that might allow us to get

to disarmament without world government. In my mind depends at least a little on what we mean by disarmament. I have been thinking of writing an article called: "what do we mean by zero?" Because different people are actually talking about quite different states of being at the end. So there's one whole set of thinking that is: okay, we have zero nationally controlled nuclear weapons, but there's some force that's run by some super un type thing that's out off on an island somewhere, whatever and that will deal with cheating, and with deterred major conventional invasion, etc. I personally don't think that's plausible for a number of reasons. We can't get the Security Council to do anything about the war in Ukraine. How is it possibly going to respond to a state armed with nuclear weapons? I mean, seems inconceivable today. What seems more plausible to me, is a world where we really do have military systems that have a lot of defensive capability and not a heck of a lot of offensive capability. And we have more cooperative international arrangements and many of the key drivers of division have been resolved. There's some deal in the Middle East, there's some deal over Kashmir between India and Pakistan... there.

Michal Onderco: So it's basically CND.

Matthew Bunn: South Korea and North Korea. And so I think there a lot of the sort of day-to-day work of peacebuilding is actually work that contributes, in the long run, to nuclear disarmament. So my father was one of the key drafters of the first official US proposal for general and complete disarmament. As you may know, my father was one of the initiators of the NPT.

Michal Onderco: And later an illustrious scholar.

Matthew Bunn: Right. So it's called Blueprint for a peace race, and it came out in the Kennedy administration. And it's a very interesting document from today's perspective. First of all, it is a time bound framework for disarmament remarkably. It has particular dates by when things would happen and so on. Second of all, it really is gentle and complete. It's all the tanks, all the planes, all the artillery, etc. So, edit and the scale of ambition is remarkable. So because it's not just nuclear weapons, it's conventional weapons as well, you can't just rely on the IAEA, because they don't know anything about anything but the nuclear material. So it proposes the creation of a UN verification agency with anytime, anywhere inspection rights over the entire planet, and no right of refusal or veto by anybody. So then you think: "well, if I'm not going to have tanks or planes anymore, somebody has to take care of security." So it proposes the creation of a UN army, that's going to take care of security for everybody. And this is an official US government document, it just blows your mind when you read it.

Michal Onderco: But coming back to you, would you say that a disarmed world is a world where the concept of deterrence makes no sense anymore? Or is it the world where we do deterrence by other means?

Matthew Bunn: I can't envision, unless we have a world government, a world where states aren't getting into disagreements with each other, jockeying for power over one thing or another, etc. So I mean, one version of a disarmed world that many of my disarmament friends consider not real disarmament, but that seems more plausible to me, and would get rid of almost all of it nuclear weapons danger, is a world where there are no more assembled nuclear weapons. But the states that used to have nuclear weapons have, each out of 100 or so, that are dismantled or watched over by UN guys with blue berets. They're deeply buried in a mountain somewhere where they'd be very hard to destroy it and prevent it from being reassembled. And that way, someone who cheated gets very little

advantage out of cheating. Because their adversaries will just reassemble their weapons, and then they have no advantage anymore. And similarly, there's less of the problem of you've made the world safe for conventional war. Because if there really were a really big conventional war, states would reassemble their nuclear weapons. And so it would address some of the key security criticisms that have been raised. I think legitimately about nuclear disarmament. On the other hand the obvious problem would be: okay, what if the cheater could destroy the ability to reassemble the weapons? And that that would take a lot of work to make sure that wasn't the case.

Michal Onderco: I always end interviews with a question. Is there something I should have asked about and I didn't?

Matthew Bunn: Well, I'm interested by this conversation because I thought the conversation was going to be much more about tell me cases where aspects of civil society have affected policy.

Michal Onderco: So we talked about these budget issues. But if you would like to talk about another case, please tell me.

Matthew Bunn: Well, I mean, I think the biggest cases have to do with the sort of origins of arms control, etc. And Matt Evangelista, his book on armed forces, I think is very good on that. But I'll tell you a few stories that are in the paper on the role of civil society in nuclear security. So, before 9/11, for example, the International Atomic Energy Agency had literally four people working on security for nuclear material. Tiny little office, and they had recently created a new program, where a state could ask for a review of its security measures. And they had a bunch of requests from states, because they only had four guys, they can only do like two a year or something like that. So I was talking to them, and realize that, if they had another million bucks, that could literally double the rate at which they were doing. And at that time, we were working on creating what's now the Nuclear Threat Initiative. And trying to come up with plausible, actionable things that could spend their money on that would help. And I, and the people at the then just being put together Nuclear Threat Initiative, said: "oh, let's give money to the IAEA for nuclear security." So then, when people at the IAEA heard about the possibility that there'd be money, everybody else wanted it. They were like: "why should these four irrelevant guys in the basement somewhere I get this money when there's safeguards, and their safety, and there's technical cooperation that cures cancer, and all sorts of stuff." And so the IAEA ended up to sort of tie it up in its own bureaucracy to make a proposal. And so, after some back and forth, I ended up drafting the proposal in the form of a proposal from the NTI staff, to the NTI board for authorization to negotiate with the IAEA a gift for this purpose. As it happened, history is full of random coincidences, the relevant meeting of NTI's board occurred either the day after the 9/11 attacks, or the day after that, or something like that, within the next couple of days. And the notion that we needed to do more to keep nuclear materials out of the hands of terrorists seemed pretty obvious at that moment. So that became the founding gift of what's now the IAEA Nuclear Security Fund, which funds almost all of the IAEA's nuclear security work.

Michal Onderco: So why does that go through NTI and why not through IAEA budget? Because IAEA has been for, I don't know how many years, have been having this zero-growth budget?

Matthew Bunn: Well, so because a civil society organization can make a decision like that, whereas an international organization that is a creature of its member states needs to have a long, potentially years long, discussion before it can reallocate money from one place to another. So what the board of

NTI did, which was a good idea I hadn't thought of is they said: "no, let's make it a matching grant. We'll give them that money if a government will match it." So then Charlie Curtis, who was the I think the Chief Operating Officer of NTI at the time, called up the Secretary of Energy and said: "we're going to make this gift will you match it?" And the Secretary of Energy said: "I will not only match it, I'm going to double match it." And so it was with those combined gifts, the NTI's gift and the US government gift, that were the founding gift, and now it's like a month after these conversations to put. So that was an example of civil society, providing an idea, and providing money to jumpstart it and sort of shame governments into taking action. Because even civil society with its much smaller resources, was willing to spend real money to do it. So a somewhat similar event was the founding of what became called the Global Threat Reduction Initiative. So it is now the case in the world, that more than half of all of the states that used to have potential nuclear bomb material, either plutonium separated from spent fuel or highly enriched uranium, on their soil, have gotten rid of it. And a lot of that work was done by the Global Threat Reduction Initiative. So how did this come to be? Well, we were doing research here, I had a couple of colleagues. And there was a teeny little us program that was about converting research reactors from using highly enriched uranium to low enriched uranium. that was focused only on US design reactors. And there was a separate related effort to work with the Russians, on converting Russian supplied reactors, to use low enriched uranium. Then there was a separate effort in a different part of the Department of Energy that was about bringing back the highly enriched uranium that was no longer needed once the reactors had converted to low enriched uranium. But it was focusing on only a very small proportion of the highly enriched uranium the United States exported. And there was another totally separate program that was just getting started to help the Russians ship back the material to Russia.

So I wrote a paper that basically said: "this is ridiculous, we need to put all of these into one pot, get rid of the gaps between these programs where stuff just isn't covered, and get rid of the overlaps. And make it, by putting it all together and making it a little bit bigger, it then gives it enough political heft, then it can negotiate with governments at a higher level, offer a broader range of incentives for the stuff for governments to agree, etc." So I wrote that paper, NTI liked that paper, we got a couple of other NGOs in Washington saying: "let's do this." And then an issue came up where in Yugoslavia, there was a bunch of highly enriched uranium at a research reactor in what's now Serbia. And it was a lot. It was 80 kilograms or so, if I remember correctly, 80% enriched, highly enriched uranium. That was fresh under-radiated, enriched uranium, so really nice potential bomb material. As you may or may not know, the Hiroshima bomb was not actually weapons grade material, it was only about 80% enriched. Sort of an irony of history that the first nuclear bomb used in war was not weapon grade uranium, anyway. And the Yugoslav said: "yeah, you can cut it away. We're not doing anything with it, but only we don't think it's a big problem. What we do have a big problem with is poorly managed spent fuel in our research reactor. So we'll only let you take it away, if you will help us with our problem, the spent fuel." And various parts of the US government were asked about this and said: "I can't find anything in my authorizing legislation that allows me to spend money on helping a foreign country with an environmental problem, with their spent fuel that has nothing to do with security for the United States. And wasn't US origin spent fuel in the first place. I have money, but I don't, as far as I can tell, I don't have any authority to spend it on that." And so it became very obvious that there was a need for somebody to have authority to offer a range of different possible incentives that countries might want. And NTI, again, stepped in and said, at the request of the US government actually stepped in and said:

“screw it, we'll pay for it.” And so the uranium got airlifted out, the Yugoslavs got a little bit of help with their spent fuel, eventually, they needed more help with their spent fuel, and it's a long further story. But it made it very obvious that there was a need.

So then people in Congress started... and I had connections, NTI had connections, some of the other NGOs we're working with had connections. You never win battles by yourself, it requires a coalition to win battles. But anyway, Senator Domenici, who I mentioned earlier, started writing a draft of legislation, as did his Democratic counterpart, Senator Feinstein, they were writing different legislation. I was like “oh, my God, what a nightmare.” And I managed to convince both offices to talk to each other and write one piece of legislation. So that piece of legislation was getting written. And then Mohammed Elbaradei came town, and to talk to Bush about Iraq. And because of this previous gift about nuclear security, he stopped by NTI, and said: “I'm going to see Bush, is there anything you want me to bring up?” And they said: “oh, there's this thing about getting rid HEU in research reactors, he said: “oh, that's a good one, I'll bring that up.” So he brought it up with Bush and Bush, apparently, literally called the Secretary of Energy, while Elbaradei was still in the office and said: “do this thing.” And the Secretary of Energy had already, because of the legislation being written, had already created a sort of small working group to figure out what such a program would look like, but they hadn't decided to actually launch it. And then the President called, so then they decided to launch it. And so that program came to be.

Michal Onderco: When I talk to different representatives of civil society, they often tell me, very little is possible to achieve and very little progress is possible to achieve, and very little success is possible in if you are a non-governmental, sort of civil society actor in this field. Now, you have spent 15 minutes telling me about all sorts of things that are possible to achieve. Is it because nuclear security is different from other areas?

Matthew Bunn: Yes. So if you want to get states to modify their fundamental nuclear weapons targeting policy, that's very, very hard. That has immense institutional and intellectual momentum. And in particular, I mean, if you look at the Obama administration, the Biden administration, we have two Democratic presidents who believed in a very different approach to nuclear weapons, appointed people who mostly believed in the traditional approach to nuclear weapons. And both had campaign, as one example, on a no first use policy. And both led nuclear posture reviews that said: “we can't do a no first use policy.” So the difficulty of changing the sort of fundamental approaches to targeting, under what circumstances with nuclear weapons be used, and so on, is very, very high. Whereas when you're trying to suggest new, better policies in areas where there only is a little bit of policy, and nobody's especially against making a change, it's way easier, just way easier.

Michal Onderco: In a way, you chose the easy job.

Matthew Bunn: You could argue, but it was also a job where things at least in the early 2000s, urgently needed to be done. I mean there were places with nobody but a nightwatchman with a sidearm guarding a bombs worth of highly enriched uranium. And I can say that the weapons usable nuclear material in the world compared to 25 years ago is dramatically more secure than it was. And I can honestly say I had a little bit of something to do with that. It's not like 90% of what happened was because of me by any means, but I contributed.

Michal Onderco: I think this is a good moment to stop our interview. Thank you very much.