The Fallout After Fallout: What Do Nuclear Weapon States Owe Non-Belligerents?

[00:00:00] Speaker 1: Good, great, welcome everyone. Thanks so much for coming in. I appreciate that as, you know, buzzy of an issue as Golden Dome is that you joined this conversation because it's actually gonna be a big conversation, I think, certainly over the next year, but in the coming years, as countries attempt to contend with a very difficult issue of the possibility of nuclear war. My name is Alex Bell. I am the President and CEO of the Bulletin of the Atomic Scientists. I knew at the Bulletin fresh off a stint at the Department of State where I was the Deputy Assistant Secretary for Nuclear Affairs in the Bureau of Arms Control, Deterrence, and Stability. So I'm very excited to be here. This is my, I can't even count the numbers, but my first Carnegie conference was in 2007, and I think it's such a great program. Thank you all for being here. So today, as I said, we're going to talk about just the very light issue of what do nuclear weapons states owe non-belligerents in the terrible event of a potential nuclear conflagration. So today, joining us, we have Daryl Press, who's a professor of government at Dartmouth University, Michi Nishida, who's a professor of, in the School of Global Humanities and Social Scientists and Deputy Director of the Research Center for Global Risk at Nagasaki University and Elaine White Gomez, a professor of practice at Johns Hopkins School of Advanced and International Studies so we'll do some questions, we'll have a bit of a conversation and then we'll open it up for you so please get an idea of tough questions you can throw out to the panel along the way But to get things started, Daryl, easy light question for you. What is the moral, legal, or political justification for using nuclear weapons in ways that would likely severely harm non-belligerent and neutral nations? For example, the radioactive contamination, climate change caused by fires, massive disruption or shrinkage of food supply chains, or refugee crises, and what is the justification for the perpetrators of such harms not to provide financial or other compensation to innocent nations that suffer significant losses? So very light, easy question.

[00:02:32] Speaker 2: So basically, I've been asked to please try to defend the infliction of mass starvation, civilizational collapse, and the destruction of humanity. Great, thank you, thank you very much. Wonderful to be here. I would say, as everybody in this room knows, one element of nuclear deterrence is threatening to do things which are very, very destructive for the purpose of reducing the probability that those very destructive things will happen. Making those threats in and of themselves is clearly ethically problematic, but it's also, in my view, necessary. And it's necessary for two reasons. Reason number one is through the issuance of these threats, you reduce the likelihood that you're gonna have one of these nuclear wars in the first place. And number two, through the issuance of threats, You reduce, in many cases, the incentives for nuclear proliferation by extending nuclear deterrence in the case of the United States. But the question is, what are the obligations that countries who have nuclear weapons and have a nuclear deterrence posture have toward others? And I would argue there are at least two. So obligation number one is, I believe that a nuclear-armed country in the 21st century has a deep obligation to its own people, to its allies and to countries around the world to do nuclear deterrence well, meaning to deter effectively and make sure that there are no circumstances that could arise in which an adversary could believe it's gonna gain meaningful advantage by beginning a nuclear war. That there are no circumstances in which an adversary can believe it can either disarm you or so limit your retaliatory options that it would somehow freeze you. But if you have nuclear weapons, you're

basically raising the risk to everybody and therefore you have to make sure that your posture, your forces, your training maximize the effectiveness of your deterrent. That's number one. Number two and more perhaps controversially, I think that nuclear armed states have an obligation to ensure that if deterrence fails in some respect, respect, that they have the capabilities to respond in some fashion that doesn't cause the kind of outcomes that was described in the question. And so they have capabilities of responding to plausible incidents of nuclear escalation on the Korean Peninsula, or in five years from now in the Strait of Hormuz, in ways that wouldn't send the world into the kind of directions that Alex just described. So what are the obligations? I think obligation number one is to not do it in a minimalist fashion, to not do it on the cheap, to not do it in a reckless or careless way, but to really invest in doing nuclear deterrence well. And number two is to maintain as a backup in case deterrence fails, the capabilities to respond in ways that you would want to respond that mitigates the consequences to your own civilians, to the civilians of allied nations and to the people elsewhere in the world. And we can get into details about what that might mean.

[00:05:45] Speaker 1: Thanks so much for that. Mishi, the Japanese Confederation of A&H Bomb Sufferers organizations, more known as Nihon Hadankyo, which won the Nobel Peace Prize in 2024, fosters awareness of the effects of nuclear war. The Japanese government reconciles its interest in nuclear disarmament with its interest in nuclear deterrence by emphasizing the logic of the NPT, that nuclear deterrence should only be a temporary means to provide international security sufficient for states to negotiate enduring disarmament. Is there an alternative approach that nuclear armed states and alliances would agree that would accomplish disarmament faster?

[00:06:31] Speaker 3: Yeah, thank you very much for inviting me for this very important conference. So the short answer to that question is probably... I mean, I can't really think of alternative for the short term at least. The expression that you just mentioned about deterrence being as a temporary measure is an expression used in the report by the International Group of Immigrant Persons for World Without Nuclear Weapons, Just published last month, I guess. But even that position is not an official one. The officially, I think, the furthest the nuclear weapon states and allied countries are able to go is, as long as nuclear weapons exist, nuclear weapons serve defensive purposes and deter aggression and prevent war. So this is an expression, the G7, Hiroshima vision, and also leader statement by the five nuclear weapon states in 2022. But if you flip-flop that expression, that means nuclear deterrence is a temporary measure. So I think that's the furthest thing that nuclear weapon states and allies could go. But even that, just after the leader's statement of the five nuclear weapon states in 2022, just one month after that publication of that statement, Russia started aggression on Ukraine with the threats of nuclear coercion, which is not for defensive purposes. It is a very aggressive and very offensive use of nuclear weapons as a coercion. So even that is no longer shared by some of the nuclear weapon states. So I'm not sure if we can go even further, and nuclear weapon states and allies can go even further than that, which is no longer be held, you know, the expression of nuclear deterrence as being a temporary measure, yeah. So, unfortunately, yeah, thanks.

[00:09:09] Speaker 1: No, thanks for that. Elaine, the UN General Assembly last year established an independent scientific panel on the effects of nuclear war, often referred to as the panel, to study the physical and societal consequences of nuclear

war, with a final report expected in 2027. What do you think would be the most effective ways to make leaders of states that rely on nuclear deterrence speak to the report's conclusions?

[00:09:43] Speaker 4: So we don't know what the conclusions are going to be like, or what exactly the conclusions are going to be, but we can anticipate that the study is going to have a systemic approach, that is. I think there is little doubt in today's world about the interconnected nature of the world that we are living in. This makes international relations inherently systemic. There is, and the consequence it has for policymaking, and in this case for the security doctrines, is that the overarching traditional concept of international politics, which is national interest, is not actually divorced from the systems. This is the nature-based system, the planet, but also these socio-economic and technological systems that we have built that actually sustain our planetary life. And so the unifying threat of the position of the non-nuclear weapon states throughout the decades is that any nuclear explosion, the non-nuclear explosion can be contained in its impact, in its effects. And at the end it's not only going to cause environmental and human damage, but it can also cause damage to the human-based or human-created systems that actually sustain our planetary life, including, for instance, the telecommunications, the data centers that actually host vital information for the functioning of the world, different world systems. So we are, as I said, the unifying threat of the historic position of the non-nuclear weapon states is that any nuclear detonation, needless to say a nuclear war, is going to have unacceptable humanitarian consequences, but also systemic consequences. We anticipate that the study, because actually the mandate, it goes precisely in that direction. It will examine the physical and societal consequences of a nuclear war on a local, regional, and planetary scale, including climatic, environmental, radiological, and other impacts on socioeconomic systems. So we can see that this is going to generate a, first of all, an updated report that is going to comprehensively gather, systematize all the existing information of the last decades and update it with all the forecasting systems that we have today to generate a report that is going to give information that is going to be of concern for citizens around the world. So the best way in which the nuclear weapon states can engage in this process is to actually engage to actually engage with the research gaps that have been identified by the non-nuclear weapon states and to have a constructive dialogue and also to obtain some lessons learned for them because the panel is going to provide information that is going to be the fundamental also for them as they plan their, they undergo their war planning and security doctrines and the development of the security deductions. We hope that they are going to be able to incorporate this systemic impact and effects of any nuclear detonation, needless to say a

[00:14:36] Speaker 1: nuclear war. All right, so I have a yes or no question for each of you and we'll just go down the line. Are world leaders, whether in charge of countries with nuclear weapons or under an extended deterrent nuclear umbrella or without nuclear weapons, prepared for nuclear war? Yes or no question. No. No. No. Are publics around the world aware of the threat at the level that they should be of the possibility that nuclear war could happen? Yes or no?

[00:15:17] Speaker 2: I don't think it's a yes or no question. I think, I'll say my sense is that probably publics, in my opinion, underestimate the probability of nuclear war. But on the other hand, they may overestimate what that means in terms of global systemic consequences, that in reality there's a wide range of horrible effects that we would call nuclear war, and some of them would look just as terrible as was just

described, and some of them would not. And so I think publics probably underestimate the probability, but probably overestimate what that means in terms of

[00:15:52] Speaker 1: global consequences. I'm gonna pick at that a little bit because that was an an actual argument point about some of the language surrounding this issue of the idea that any use of a nuclear weapon would have global catastrophic consequences and others saying that no, there could be a scenario in which a small use could be contained in some way. And why do you think that was such a sticking point among communities working this issue?

[00:16:21] Speaker 2: So, I mean, I think the phrasing that says basically any nuclear war is a global catastrophe. I would describe that as a political slogan. I know why we say it, and we say it for good reasons. We say it because what we're trying to do is create as strong a bar, as strong a restraint to nuclear use and to try to avoid leaning into situations in which we understate the consequence of crossing that threshold. And so I kind of get the good intentions that are behind saying any use of nuclear weapons is a global catastrophe, but in reality, in reality, there's a wide range of possible uses of nuclear wars and some of them, or even nuclear use or even nuclear wars. And some of them would be very, very localized catastrophes And some of them would be regional catastrophes and some of them would be global catastrophes. So I do understand the good intentions behind casting this to say, there is only one type of nuclear employment and it's a catastrophe and it's shelter time. But A, it's not strictly true. And B, uttering that phrase and just repeating that as a slogan might distract us from the important things that we can do to make sure that if there is, God forbid, a crossing of the nuclear threshold, that it doesn't end up there.

[00:17:48] Speaker 1: So Michi, do you think publics are aware to the extent that they should be, yes or no? And then if the answer is no, what do you think are ways that we could better engage the public about threats of these nature?

[00:18:04] Speaker 3: Yeah, so the answer is no. And with regard to just the issue that you guys were mentioning about any use of nuclear weapons cause humanitarian consequences. I think the hidden phrase that could be put in place is because we don't know if any use can be contained for further escalation. So because of that, probably the more accurate expression should be any use of nuclear weapons could cause global humanitarian consequences. But I don't think there's an expression of global. Any use of nuclear weapons cause humanitarian consequences, which is true, I think, even if it's localized or regional. So if it has global, then it should have a qualification How we can engage? Yeah, I think the UN type of report that we are just establishing I think that's a good way to go I hope it will be a truly scientific study rather than a political movement. As Daryl just mentioned, people do have a probably wrong impression of any nuclear use being as a global nuclear war like the one that could have happened during the Cold War between the US and the Soviet Union. But the real threat, the real scenario, plausible scenario at this moment is more like a limited nuclear use, which is more real, I think, than a global nuclear exchange. So that sort of more plausible scenario should be more, I think, educated to the people.

[00:20:29] Speaker 1: Thanks. So again, same question. Do you think publics are informed? And feel free to comment on what has just been said. But one of the arguments that I think you heard when the UN panel was being discussed was that

no, we actually already know everything that we need to know. And sort of, can you talk a little bit about the community that was driving support for that and how they reacted to that argument that there was no new science?

[00:21:04] Speaker 4: So the first answer is no, there is not enough public awareness. And actually, I asked this question to students and people from young generations. I asked them whether with their friends, their conversations, their parties, if they ever talk about climate change. And they say, always. And then I asked them whether they ever talk about nuclear war or nuclear weapons. They said, never. And I asked them why, and they said, we just don't have the awareness that this is a problem. And I think part of the reason for that is that in terms of climate change, The regime, the international regime is more open. It has science that is publicly available. And it has participation from civil society besides all the specific effects that people in different parts of the world are already starting to experience. So I think that there is a lot to learn from how we have been building at the international level a climate change regime that actually has placed the concern about climate change in the mainstream of the conversation in the policymaking processes. So that is one aspect. The second aspect is that, and related to that, is that, indeed, the fact that we have a scientific body and some scientific study reminding people what the consequences would be today, because in 1945 it was something completely different. The world was not as interconnected as it is today. The same we can say about this expectation that a nuclear explosion can be contained and it's not gonna have a global impact. We could say the same thing about conventional war, about the invasion of Ukraine. Nobody could have anticipated the global impact it was going to have, but somebody who was actually going to build a house in Costa Rica had to endure prices of raw materials that were skyrocketing because of the war in Ukraine. So it is very, in today's world, I think it is the most important aspect that we need to consider is that we are in a completely interconnected dynamic and completely systemic interactions. There is all the science that we need to know today. Experts know, but the public opinion doesn't really have that information. But I think it is fundamental, a fundamental step in 2025 to have a group of experts reminding the young generations and the mainstream of the conversation about what exactly would mean today, the risks that we have today. And obviously there is a special concern from non-nuclear weapon states because of, precisely because of the war in Ukraine has reminded us that we are not protected at all from the consequences. Not only the environmental and social and destructive consequences of any nuclear explosion, but also we are not exempt from the blackmailing and coercion of the threat of use of nuclear weapons.

[00:25:13] Speaker 1: So, getting back to sort of the core question of what nuclear weapon states owe non-belligerents, you know, that seem, and Daryl, you kind of touched on it, of how a country would potentially respond to nuclear use. But that's a conversation about nuclear use, which there has been sort of a disconnect in terms of like a lot of the conversations around support for the TPNW are based on this idea that there's no way to respond adequately to potential nuclear use and that the only way to sort of deal with it is full and complete disarmament. But we can, and we've talked a little bit about scenarios in which a small nuclear conflagration could happen, nuclear terrorism could happen, for example. do you actually have a conversation about responding to potential use when there is sort of a resistance on both sides to talking about that reality? So I can start with you again or if you want to think about it I can kick it to

[00:26:23] Speaker 2: someone else. So it's a great question and I think there are many hurdles to frank conversations about these things but in some sense the societal conversation is already going on and it's going on in the form of force structure decisions. It's going on in the form of what weapons does the United Kingdom or does France or does the United States actually build in its arsenal? What are the capabilities? Are we gonna have small yield weapons in addition to high yield weapons? Are we gonna have concepts of employment that are designed to minimize fallout or not? And so I would say that at the public at this level of reading the New York Times or the Wall Street Journal, there's not very much to read and to hear about a rich conversation about these things. But that conversation is lacking because in terms of the responsibilities that we have, I'd say the responsibilities are playing out right now. And it's either the nuclear armed states build the capabilities to A, deter effectively and B, give them response options that they could employ if deterrence fails that are not catastrophic and are not, don't have those global effects, or they avoid those conversations and they find themselves in these circumstances where the only weapons they have do have those catastrophic consequences. And so to me, that's the debate as a society that we need to be having, not just in terms of abstract nuclear war fighting theories or nuclear deterrence theories, But in terms of within the nuclear arsenals of the countries who have nuclear weapons, what kind of capabilities is appropriate and necessary for them to have? And that's the debate we really need to have.

[00:28:11] Speaker 4: Is it?

[00:28:12] Speaker 3: Yeah, so the TPNW was created out of the frustration over the lack of progress and disarmament, they say. But at the same time, their interest in security. Their security interests also started being debated in the TPNW conferences these days. And that global south's security interests have to be respected, while at the same time nuclear weapon states and nuclear-reliant countries' security interests also need to be respected reciprocally, mutually. So in terms of that, I think there's an area where NPT and TPW, or nuclear weapon states, nuclear allied states, and nuclear non-reliant states, can have a conversation about at least the issue of non-belligerence. the Global South countries, which have nothing to do with nuclear exchange or nuclear use, their security interests have to be respected. And I don't think there's anything that nuclear weapons states, nuclear-related countries can say against that kind of interest. So under the international law, non-belligerents do not have to tolerate physical damage, any damage that are caused by war between belligerents. So it's the same thing, non-belligerents in the nuclear use have to be, I mean, they have the legal right to claim any compensation, whatever, under the international law, general public law. So that is probably the starting point that where they can have conversation. And NPT, Nuclear Weapon States and Non-Nuclear Weapon States, they have a grand bargain. And NPT states, Nuclear Weapon States, already have an obligation that they owe to the Non-Nuclear States, not just about the nuclear use, but so that the nuclear use wouldn't happen, nuclear disarmament itself, but specifically risk reduction and that sort of things. So I think that's where, you know, we can have a conversation, I think. I don't know if I have answered your question, but yeah.

[00:31:16] Speaker 1: No, no easy answers here. So yes, Elaine, quickly, so we can move to, got a lot of questions here, but again, how do you facilitate a conversation between nuclear weapon states and non-nuclear weapon states on the issue that

both sides seem loath to discuss, which is the actual use and mitigation of the aftereffects of a nuclear detonation?

[00:31:40] Speaker 4: Well, from my point of view, first of all, I'm very pleased that we're having this conversation that this conference has this panel. I think it is very important that in the capitals of nuclear weapon states, there is this conversation about third parties. I don't know if this is something that we can say it has been a historic trend, but I think that is a new development and it is a conversation that is gaining saliency in the last years. And of course, I would like to, I think the adoption and the conferences of the humanitarian impact, the adoption of the TPNW and its entry into force has had a catalyzing effect in conveying, systematizing this information and creating a platform, a dedicated space where this conversation is happening in a very serious and scientific and evidence-based manner. It has catalyzed also new initiatives and agency and leadership at the General Assembly. Not only the panel was adopted, but also there have been some resolutions dealing with the legacy and the need for victim assistance and environmental remediation and the necessary disclosing of information regarding historic use, past use of nuclear weapons and testing and related activities. So I think that we also have a responsibility from the demand side in terms of articulating our approach, our discourse in a serious manner and also backed with scientific evidence. That is a first step. A second step, I think it also, the last meeting of state parties of the TPNW, following a mandate from the second meeting, there was already a process of consideration, of studies regarding the special concerns of security concerns of the non-nuclear weapon states. And there were already some recommendations in that report among activities that could be undertaken by non-nuclear weapon states, including to request, to have joint requests for transparency measures for the nuclear weapon states, or to request joint studies in all of the technical bodies, the AIEA, the CTBTO, and all of the different fora where the issue of the nuclear order is discussed to have a specific resolution studies that address the situation. So in that sense, we would have inputs for the conversation that are not only partial, not only coming from one side, but that will also be coming from collective bodies or mechanisms, and that is, I think, is going to help in easing the conversation somewhat.

[00:35:19] Speaker 1: All right, we've got lots and lots of questions that go in various directions of what is a very complex issue, but I'll throw one in here that sort of challenges the assumptions of the panel itself. And it's from Patricia Dworek, somewhere in the audience, challenging the statement that nuclear weapon states owe the rest of the world strong and robust nuclear deterrence. How would you make this argument to a growing number of states that view nuclear deterrence as an increasingly risky bet in today's complex geopolitical environment and as an existential threat to their security, especially given the lack of tangible progress on nuclear disarmament and risk reduction?

[00:36:05] Speaker 2: So it's a great question, and let me clarify what I meant. What I meant was a country like the United States that has nuclear weapons, I believe owes it to the international community to practice nuclear deterrence in a safe and responsible way. And so to me, it would be an abrogation of responsibility to have a nuclear deterrence and either not train the force well, make it highly vulnerable to accidents, or allow it to get into a position where it was increasingly vulnerable to disarming attacks. And so what I was saying is for the nuclear weapons states, if they're gonna practice this dangerous business that is nuclear deterrence, they need to do it well. To me, the 800 pound gorilla in the room is obviously the question of

nuclear abolition. And there's obviously lots of different directions this conversation could go. I would just say typically the nuclear abolition debate happens about on the dimension of feasibility and can you really verify and can you really get agreement from countries who are conventionally weak and these sorts of questions. I mean, in my view, the strongest case against nuclear abolition is not the verification issue. It's the issue of the danger of renuclearization crises in the midst of serious conventional wars. And so I guess, let me just say overall, just to clarify what I was saying is, nuclear armed states have an obligation to do it well, because it is taking on a responsibility that affects us all. But whether or not there's a better world than a world of some number of nuclear weapon states with nuclear weapons doing deterrence carefully, whether there's a better world than that, I'd say it's highly debatable. I'm skeptical, though I'm guessing my panelists would disagree.

[00:37:53] Speaker 1: Thanks for that. Quick thoughts on what was just asked or Daryl's response?

[00:38:05] Speaker 4: Well, as I said, the vision of the non-nuclear weapon states is that the nuclear weapon states have a responsibility with number one, complying with their legal obligations. and especially Article VI of the NPT, there is an obligation to undertake negotiations in good faith towards the abolition of nuclear weapons. They have a responsibility. Actually, the issue is that there is no way in which a nuclear war, a nuclear exchange is going to not affect third parties. So the responsibility is not to start any nuclear exchange, any nuclear detonation at all. That is the first, the very first responsibility beyond those legal obligations that we already know. So there is a responsibility towards third party and towards humanity as a whole in not using nuclear weapons.

[00:39:20] Speaker 1: Okay, I'm going to move us to the next thing if you feel free to jump in later if you'd like to. From Ali Alkis, what specific measures should nuclear armed states adopt to prevent or mitigate the risk posed by attacks on nuclear facilities, which would or could release radioactive material or have a latent nuclear weapon-like effects on non-belligerent states?

[00:39:47] Speaker 3: Well, nuclear facilities are, I mean, at least nuclear power plants are already targets that are prohibited to be attacked under international law, so, I mean, well, there is a very small, narrow, you know, exception to that, but in principle it is prohibited already, you know. It's a nuclear power plant, so maybe it needs to be expanded to nuclear facilities in general.

[00:40:19] Speaker 1: Yeah. I mean, but we're actually experiencing this right now, Russia having, you know, taken over Zaporizhzhia, Zaporizhzhia itself being in a position, so law aside, we're clearly in a situation where a nuclear facility, a nuclear energy facility was put at risk. So do you think that means that the law, and I think it's a little gray about what's actually prohibited but, you know, what would it look like for nuclear weapon states, non-nuclear weapon states to negotiate on that particular issue?

[00:40:53] Speaker 3: Yeah, so I think nuclear, I mean, there is a common interest among probably most states, including nuclear weapon states, non-nuclear weapon states, or non-belligerents all together so that nuclear facilities not be targeted, so that radioactivity will not be released, especially to third countries. So yeah, there

should be a negotiation, but whether or not it will actually happen is another question. but yeah.

[00:41:34] Speaker 1: Okay, so we have a general question from Renata Delacqua. Do you see a role for human rights in this conversation? What would be the advantages or disadvantages of bringing a human rights lens to the debate on nuclear deterrence? I'll start with Elaine.

[00:41:50] Speaker 4: If we follow a systemic view of international politics, every body of law is interrelated. Obviously, the use of nuclear weapons means a breach to the right to life. It's, I mean, in a series of human rights. So, it is necessary, part of what the TPNW does, is for the first time, it relates nuclear weapons to the rest of the bodies of international law that have agreed upon by the international community. nuclear weapons are related to international humanitarian law, to international environmental law, to international human rights law. Everything is interconnected. And this is the reason why the concept of national security, the concept of national interest and national security are not divorced. First of all, they are not, they don't operate in a vacuum. They operate in a context of an international system that has been built. And actually in building a link to the previous questions, we would all say that the bedrock of international system is the prohibition of the use of force, which obviously it is the case. But there's another principle that we tend to forget, which is that a breach to international peace is a matter of concern for all of humanity. And this is the reason that we have agreed upon a series of actions and in a whole chapter of collective security, but the very first basic principle is that any breach of the peace in anywhere, anywhere in the world, is a matter of international concern to the rest of the regions. And we all have, first of all, a place at the table, and we also can request and engage in a conversation with the belligerents about the very basic principles that need to be put in place.

[00:44:07] Speaker 2: Darrell? I mean, I think it's certainly true that in the 21st century, we're all connected in a variety of different ways. We're connected economically, we're connected in terms of the global environment. And what that means is, of course, that any conventional war or tariffs or emissions of greenhouse gases, these all affect everybody. But the conversation on this panel kind of highlights nuclear weapons because of their unique ability to cause global or regional consequences. And so it's different than all those other ways that we're connected. The point that in a sense I keep making over and over, but I just think it's so important to say, especially in the context of people alighting over this, is not to be crass, but the consequence of two or three large-yield detonations detonated as ground bursts would have regional effects and kill many, many people far away from the target sites. On the other hand, the detonation of the same number or more weapons that are low-yield weapons detonated as air bursts might not kill anybody more than a half mile away from the detonation. And so, as my colleague said, the question is what happens then and doesn't it create the possibility of greater nuclear war? And the answer is absolutely, which is why step one, avoid nuclear war. Posture your forces to deter. But it doesn't end with step one. Step two is, if God forbid, you find yourself in a situation in which somebody has crossed the nuclear threshold, We would all be better off if some nuclear-armed countries, the ones where we have votes, have the capabilities to respond in ways that don't create the worst of the regional or global consequences that otherwise we'll have to face.

[00:46:01] Speaker 3: Yeah, so that's exactly the concept that the book that George and I published, and actually George did most of the work, but I just made a few comments. But to avoid overkill, the concept of avoid overkill and of course the definition of overkill is very difficult but that's where nuclear reliant states and non-nuclear reliant states can have a start conversation about where's the line between overkill and not overkill. Of course any use of nuclear weapons should be avoided, should not happen. But if nuclear deterrence were to fail, then it's better to have as minimal possible damage than large-scale global effects. So what is the definition of overkill? What is the damage that needs to be avoided, especially to third parties? That sort of things can start a conversation about, and that's, upon that kind of discussion, nuclear posture, nuclear policy can be adjusted to that effect.

[00:47:28] Speaker 1: But pulling at that thread a little bit, talking about things like overkill and the changing of deterrence theory. Elaine said nothing happens in a vacuum. Unfortunately, the nuclear deterrence conversation has largely been in a vacuum since the end of the Cold War, where the general public was like, ugh, glad that's over, and went and focused elsewhere. And there was a core group that was continuing to work and theorize, and again, theorize being the optimal word here, about these consequences. How do we actually force that conversation into a broader community? How do we actually get it out of a vacuum and talk about issues like overkill or counterforce versus counter value? Something I think, you know, there are some in the nuclear deterrence community that are happy to not have anyone join the conversation because that would complicate things. Thoughts?

[00:48:23] Speaker 2: No, I do think this should be broader public policy debates, partly because of the consequences we're all talking about, partly because of the vast expenses that we're spending on nuclear modernization. I do wanna note that the sorts of things that at least I've been arguing for in the course of this come with trade-offs, there are big trade-offs here. And the way I pitched this at the very beginning was there are these two objectives and one is deterrence and the other one is mitigation. And it would be nice if these two things were separate pillars that didn't relate to each other and you could just do both of them. But in reality, the reason that many people, including a lot of people on the arms control side of this, have been deeply skeptical of what I've been calling mitigation, is because of the reasonable fear that the more you develop those sorts of capabilities to respond to nuclear use, those sorts of capabilities are also the sort of things that could lead to spirals and arms races, et cetera. So there's no free lunch, there's no easy path here. But overall, I think the picture is exactly as you just described, which is there were a few years after the Cold War in which even the nuclear policy community got out of the nuclear business. Places like Sandia Labs started diversifying and working on other things. And then we moved to a phase where a handful of us in the nuclear policy community started thinking hard about deterrence and capabilities and force structure, but the rest of society has still stayed largely immune from these conversations, and frankly, it's probably well past time to bring them back in.

[00:50:02] Speaker 3: Yeah, that's a very hard question, but I think the more we start educating people the real plausible scenarios, then just abstract a global nuclear war, what is the real scenario that nuclear use can happen? can happen, then people start realizing that they are the ones who will be affected, and they can start raising their voice. I think that could be a starting point. And actually, what's happened now is because of the Russian-Ukraine war, already people affected by that war and people have started, I mean, have raised a concern about it. Nuclear

use can be even more, a bigger effect, I mean, in terms of, not in terms of the physical damage, but if it's contained locally, then it may be contained locally, but in terms of supply chain or radiological spread and that sort of indirect damage that could spread out to third parties. That could be something that already happened. So I mean, people who are already affected by food supply chain, for example, by the Ukraine war should start raising their voice that they are already affected by conventional war because unless they start raising their voice, legally speaking, they may not be able to make the same kind of claim that indirect damage, even indirect damage, they can claim legally. So third parties or, I mean, Global South should start raising their voice about their being affected by, even indirectly, so that they can start voicing about even local or regional nuclear use scenario. I don't know if I made it clear, but.

[00:52:26] Speaker 1: Elaine, any ideas about how to break the deterrence conversation out of its silo, or as folks inside the government like to say, cylinder of excellence?

[00:52:33] Speaker 4: Yes, so I think I have two concerns or interests. One of them is to engage the private sector, the business sector. I had an experience about two years ago when I delivered a presentation to a business community at Harvard and I was really surprised by their reaction and the lack of specific knowledge about nuclear war and the effects and I think one of the reasons why we have we already see today climate change being mainstreamed is because at at some point the business community realized it was real. So I think an engagement and a conversation with the business sector will also help break the silo because also they are going to ask difficult questions about the very logic of nuclear deterrence. The other aspect is that we, in this world of experts, we hear a lot about the effects and the impacts. But there are a lot of things that we don't know, and that is the scariest thing, which is command and control and decision-making to use nuclear weapons. Still, as we suppose, it is in the hands and minds and fingers of some individuals, five, seven individuals. And that is the scariest dimension of the conversation. And we really don't pay that much attention to the personal dimension, because part of what we are seeing in today's world is that today's bridesmanship is the fact that some leaders today are willing and able to go beyond the, to challenge the expected behavior and that should be of concern for the whole of humanity. I do recall, there was an article in the New York Times some time ago, this project is trying to apply neuroscience neuroscience or what we can about neuroscience to the decision-making process of command and control systems of nuclear weapons. I think that is another way to break the silo, to bring into the consideration the human dimension of the decision-making process and that is going to be so scary for, you know, for the whole of society, I think, that people are going to be much more interested in the conversation. I think in a world in

[00:55:53] Speaker 1: which we don't agree on a lot, I'm glad you brought up the issue of business. I think we can all agree that nuclear war would be very, very bad for business. That might be a salient argument in these times. So Shizuka Kuramitsu, thank you very much for asking this question because if it didn't come up, I was going to ask it. Is it possible to have a conversation about the issues, the potentially catastrophic consequences of nuclear war, without having a conversation about the TPNW? Because that has been a tension point that there's perhaps a conversation to be had about humanitarian consequences while also having a process disagreement about TPNW, even if the shared goal is to a world without

nuclear weapons. So we'll start, actually, with Elaine and work back this way. But again, how do you separate the two issues so you're not having people absent themselves from an important conversation because they don't want to talk about TPNW?

[00:57:00] Speaker 4: So we can have a conversation around the findings of this panel, the UN panel that is going to systematize all the available information and we can separate the evidence, the scientific evidence and scientific inquiry from the policy, from the policy perspective. Obviously one would follow the other but we can have a definitely a separate conversation about a scientific inquiry and policy in different fora at least.

[00:57:35] Speaker 1: So the panel would be a way to have that conversation separate and apart.

[00:57:40] Speaker 3: Yeah, I was going to actually mention that.

[00:57:45] Speaker 1: Good ideas are good ideas.

[00:57:46] Speaker 3: Yeah. Another thing is, yeah, I think it's possible. Another way is, you know, global South countries raise their voice about their being affected, you know, in a real scenario, real plausible scenario, like in the Ukraine situation or Taiwan contingency, especially like Southeast Asian countries are very close to Taiwan. Based on our study at the Nagasaki University, the use of nuclear weapons in Northeast Asia, radio activities spread out to many Southeast Asian countries. So if they start raising their voice without referring to TPNW, you know, nuclear weapon states need to, you know, listen to that. So that's how, I mean, they can start conversation without we actually linking to the TPNW.

[00:58:48] Speaker 2: Daryl? I guess I don't think I have anything to add on that point, I think that's all, so.

[00:58:55] Speaker 1: Excellent. do that very well, but I do want to thank all our speakers and everyone here for engaging in what has been a tough conversation to open up, that it does tend to put people sort of into their respective corners, but I think we demonstrated here today that we could talk about a wide range of the issues surrounding this from a legal perspective, from a moral perspective, from a political perspective, and I think it's a conversation that's only going to continue over the coming months and years. And I think the UN panel may well be something where we can agree, let's have a scientific discussion about this, and then see where the science leads us. But in a time when science is sort of under attack, I think all the more important for a community like ours to going back to the basics like that and talking about the science divorced from the politics. So thank you all for being a part of this conversation, and please join me in thanking our speakers. Thank you. Thank you. Thank you.