



Select Committee on International Relations

Corrected oral evidence: Nuclear non-proliferation treaty and nuclear disarmament

Wednesday 12 December 2018

10.40 am

Watch the meeting

Members present: Lord Howell of Guildford (The Chairman); Baroness Anelay of St Johns; Baroness Coussins; Lord Grocott; Lord Hannay of Chiswick; Baroness Helic; Baroness Hilton of Eggardon; Lord Purvis of Tweed; Lord Reid of Cardowan; Baroness Smith of Newnham.

Evidence Session No. 1

Heard in Public

Questions 1 - 12

Witnesses

I: Izumi Nakamitsu, Under-Secretary-General; High Representative for Disarmament Affairs United Nations;

USE OF THE TRANSCRIPT

1. This is a corrected transcript of evidence taken in public and webcast on www.parliamentlive.tv.

Examination of witnesses

Izumi Nakamitsu and Ioan Tudor.

Q1 The Chairman: Welcome and good morning to our guests, Ms Nakamitsu and Mr Tudor. We are very grateful to you for sharing your thoughts with us. As a formality, I have to say that this session is on the record. A full transcript will be available afterwards, and of course you will be able to make adjustments, if you feel that it does not represent what you said. Those are the formalities. I should also advise my Committee Members that they must declare any relevant interests when they ask questions.

This Committee is just starting an inquiry—in fact, this is the very first session—on the state of nuclear disarmament negotiations, the nuclear non-proliferation treaty and other relevant and associated treaties, where we detect a new phase opening in the world, and we need expert advice of the kind that you are uniquely placed to offer on where we go from here.

I will start with a very general first question, Ms Nakamitsu, which is to ask you to give us your assessment of the state of global nuclear diplomacy now, and in particular in the light of the whole drama of the JCPOA¹ and the Iranian nuclear programme, and what has been happening on the Korean peninsula—possibly even with reference to the statements that have come from both Moscow and Washington on where they will go on these treaties, and generally on their attitudes to nuclear disarmament and the treaties that were established in the past. It is a general question. Give us a rounded view to start with, then we can go on with questions from there.

Ms Izumi Nakamitsu: Thank you, Lord Chairman. It is a great honour for me to be here today to give evidence to your Committee's inquiry into this important issue of the Nuclear Non-Proliferation Treaty and nuclear disarmament. I thank you for your interest in these matters. Despite the political storm—you are in an historical moment in your own country—you still have a strong interest in these issues, so I express my gratitude at the outset of my remarks.

It is indeed a very difficult security environment that is affecting our work on non-proliferation and disarmament in the nuclear field. The topic of this inquiry is most relevant to the work of the UN, and as we prepare for the 2020 Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the work that we have to do is being challenged by some of the symptoms that you just mentioned. Those are the issues relating to the JCPOA; the DPRK—North Korea—issue is one positive issue that demonstrates that political will and political leadership can give a positive spin to non-proliferation and disarmament in general.

The overall environment that is affecting us is a very difficult one. While the NPT remains the cornerstone of the global non-proliferation regime, we must urgently address some of the challenges, otherwise the NPT

¹ The Joint Comprehensive Plan of Action (the Iran nuclear deal)

Review Conference in 2020 will face difficult conclusions, which is exactly what we want to prevent. The general environment has the most important impact. Some of the old or key bilateral disarmament and arms control agreements are being challenged, and that is definitely affecting the work at the multilateral level. In October we concluded the First Committee of the General Assembly, which is on international security and disarmament. That was very much impacted by the tension and difficulties between the United States and the Russian Federation, which has spread across many security-related discussions, not just on nuclear but across the board. So this global tension between the two main nuclear superpowers—those two countries own some 90% of the nuclear arsenals around the world—is probably one of the most important issues around arms control and disarmament, especially in the nuclear field.

Given this environment and based on the recognition that, rather than disarmament and arms control being a utopian ideal, if you will, we look at disarmament, arms control and non-proliferation as a critical part of the international peace and security discourse, the Secretary-General, against the very difficult security environment, decided to launch his comprehensive disarmament agenda in May of this year, which is entitled *Securing Our Common Future*. The Secretary-General has outlined a number of practical measures in support of member states to pursue disarmament and arms control, especially because the environment is so difficult. It talks about resuming dialogue, which is the most important and urgent part of the necessary negotiations for nuclear arms control and disarmament, both at the multinational and the bilateral level between the US and Russia, and extending the norms against nuclear weapons and their proliferation. The Secretary-General focused in particular on the principles that we have almost taken for granted for so many years: the non-use of nuclear weapons—a very important principle; preparing for a world that is free of nuclear weapons; and some of the practical work that we could still do to develop standards for nuclear disarmament verification. More urgent are the areas related to risk-reduction measures to prevent a nuclear detonation. Some of those consist of practical work that we could still do, despite or precisely because of the difficult environment. These are the very general remarks that I start with.

The Chairman: Mr Tudor, would you like to add a general point at this stage?

Ioan Tudor: No, thank you.

Q2 **The Chairman:** To follow that up, you talked about the two nuclear superpowers; I am not sure that we would necessarily regard Russia as a superpower nowadays, but it is obviously a power and it obviously has nuclear weapons, and it is a danger to world stability and indeed to the whole disarmament balance. If they are not going to take the initiative in improving things, where will the initiative come from? Who are we looking to start a new approach to these matters?

Izumi Nakamitsu: If you are asking me who should take the first step, the answer is that it will have to come from both sides. The message we are repeatedly sending is that differences should be resolved by dialogue and negotiation. Rather than stopping the dialogues and entering into an arms race, we would like both countries, and in fact all nuclear-weapon states, to remain engaged in dialogues, discussions and negotiations. From the United Nations, the Secretary-General and I always make it clear that we stand ready to support. If there is anything that we could usefully do to promote dialogues and discussions, we absolutely stand ready to play that role.

The Chairman: Let us press on to the NPT in particular.

Q3 **Lord Grocott:** You have touched on one or two of these issues, but moving to the review of the treaty—this is a catch-all question—could you outline the specific challenges that you can identify ahead of the conference? Also, is it even possible to start talking about any possible opportunities—how the treaty may be improved or developed? Let us look at the opportunities as well as the difficulties.

Izumi Nakamitsu: Yes. Let me start with the challenges, of which there are many. I have mentioned the difficult or deteriorating international security environment. That in itself is a huge challenge, adding pressure or stress to the review process. But there are also some issues related to the implementation of previous or past commitments. You will remember the Treaty on the Prohibition of Nuclear Weapons which was negotiated last year. In our view, that was a demonstration of the frustration on the part of non-nuclear weapon states. Many countries around the world feel that the previous commitments on nuclear disarmament and the implementation of Article 6 of the NPT have stalled and, as a result, there is mounting frustration among non-nuclear weapon states. There will have to be a genuine demonstration on the part of the nuclear weapon states that they are still very much committed to all three pillars of the NPT, including nuclear disarmament—Article 6. That will be an important part of the success element. The fact that so many countries are feeling frustrated because that has not been fulfilled is also an important challenge that we must address.

There is also, of course, the very old issue of the Middle East: a zone free of nuclear and/or other weapons of mass destruction and their delivery systems—that is the long title. The Middle East zone issue will again become a challenge. At the recent session of the First Committee, a resolution was passed which mandated the Secretary-General to organise a conference to start negotiating the establishment of this free zone. We all know that it will not be an easy issue but, at a minimum, the Secretary-General and I are sincere in pursuing these objectives. Again, the political commitment expressed by all NPT States Parties, but in particular the three co-sponsoring countries, and the countries of the region, will be critical elements if we are to make the 2020 conference a success.

The existence of some sort of bilateral engagement between the United States and the Russian Federation, especially when it comes to the extension of the New START agreement,² will be a critical issue. If those bilateral treaties were to collapse before 2020, again, that would cause huge stress. That is very much linked to the commitment of the nuclear-weapon states to their Article 6 obligations, and therefore that again will become one of the critical elements for the success of 2020.

On the opportunities, as I mentioned, there is huge stress, but we still have some time to start to address those issues. I have started to float an idea in order for us to make sure that a political commitment will remain strong. I have started to suggest that perhaps State Parties to the NPT would like to consider a ministerial, or high-level, political segment to the NPT Review Conference in 2020. Of course, it is up to the State Parties—it is not for the secretariat to dictate—but it is one of the ideas that States Parties could potentially consider so that there will be an opportunity to highlight the success of the treaty.

The NPT is one of the most successful treaties. It is absolutely one of the critical pillars of the security architecture that we have today. Despite the fact that there was a prediction that there would be 30 or 40 nuclear-armed states, it has prevented that. It is a very resilient international agreement. The 2020 conference will coincide with the 50th anniversary of the treaty entering into force. Perhaps, taking advantage of that opportunity, there could be a political high-level segment to reaffirm the political-level commitment to the treaty. That sort of measure would also highlight the importance of the treaty, and would therefore potentially add to the momentum for the treaty's Review Conference. It will of course be separate from the review, but such a political message could potentially be an important opportunity that State Parties might wish to take advantage of.

Finally, it will also be important to look at what the new challenges might be in nuclear disarmament and non-proliferation in the 21st century: the potential link with science and technology that is rapidly developing; whether we have the right kind of risk reduction measures; and whether the traditional risk reduction measures are sufficient or not. Some of those issues perhaps should be taken into consideration when we come to the Review Conference. The Review Conference is in fact an opportunity for States Parties to review and to make sure that the resilience and the relevance of the NPT in the 21st century will continue. It will be an important occasion.

Lord Grocott: I read your statement to the Preparatory Committee, where you refer to the fact that the NPT had near-universal membership, which is true. But I think that four countries have not signed up. Three of them are India, Pakistan and Israel, which are not insignificant non-signatories. Is their non-membership simply in the 'too difficult' if not 'impossible' box, so it is just parked as insoluble, or is it in any sense an

² The New Strategic Arms Reduction Treaty.

objective to get them to sign up, or—let us be more realistic—at least to show some willingness to engage?

Izumi Nakamitsu: Of course it would be wonderful if all countries signed up to the NPT but, for the time being, that is probably not in sight. It will be quite important that NPT State Parties and others that are outside the NPT framework continue to engage and that there is continuous dialogue on nuclear disarmament and arms control issues.

We need to make sure that those outside stay engaged. There are other platforms, such as the Conference on Disarmament. Of course, you might say that that has been blocked for 20-plus years, but this year, in 2018, there was some progress in terms of the Conference on Disarmament returning to substantive discussions under the five subsidiary working groups. We need to make sure that the others outside the NPT will stay engaged in disarmament and security platforms, including the UN and other multilateral platforms.

Q4 Lord Hannay of Chiswick: It is very nice to see you again. Could I ask you about the weapons-free zone in the Middle East which you mentioned? Is the work that you and the Secretary-General have undertaken now ahead of the Review Conference a kind of continuation of the work that Ambassador Laajava did? Do you have any prospect of getting—as I believe he did in the latter stages of his extremely lengthy and arduous work—the main protagonists, Israel, Egypt and so on, into the same room to talk about some of these things? Is that the way you are working? Is it happening, or will it happen?

Izumi Nakamitsu: You ask a very difficult question. The mandate that will be given by the General Assembly is now in the budgetary committee of the UN—the Fifth Committee—so we will see what kind of capacities and resources will be given in order for us to be able to carry forward this new mandate that was given by the First Committee. Secretary-General Ban appointed the Finnish state secretary as a facilitator of the process, and there has been quite a lot of substantive discussion, so we will definitely benefit from the rich discussions and issues that were identified in that process and will build on the work that was done by Ambassador Laajava. The Secretary-General has now been mandated to facilitate a formal process and we will now have to move forward.

The first point in this formal process is that we very much hope that all countries invited to that process will be able to participate fully in it. That will be quite an important statement of political commitment to the NPT 2020. I have no illusion that this will be an easy process; quite the contrary, it will probably be a very difficult process. The role to be played by the three co-sponsoring countries, the United Kingdom included, will be very important.

We should probably build around the formal process—that is, the First Committee mandate—a number of informal dialogue mechanisms so that we can encourage all states in the region to be engaged in such a process. But, again, I have no illusion that it will be an easy process. The

security and risk environment in the Middle East has evolved dramatically; it has almost completely changed since 1995. So we need to make sure that many of those new issues related to the threats in the region are properly assessed and analysed. But, again, I emphasise that the participation and engagement of all those relevant countries will be a critical first step in this important work.

Q5 The Chairman: I have just one more general question on the NPT review. The essence—the very core—of the treaty was that the world would accept non-proliferation if the existing nuclear powers proceeded to denuclearise at a pace. That was the bargain—the understanding. As Lord Grocott reminded us, it did not quite work in a number of cases anyway. What is your assessment of that central bargain? Where does the denuclearisation process of the existing nuclear powers stand?

Izumi Nakamitsu: If you compare it with the Cold War peak, nuclear disarmament has indeed progressed enormously. I always acknowledge and pay huge compliment to the efforts and the leadership demonstrated, especially by the two nuclear superpowers, the Russian Federation and the United States. Some 88% of nuclear arsenals have been reduced, so the world was moving towards a substantive Article 6 implementation, with the practical and actual disarmament of nuclear arsenals. The problem is that that movement has stalled, which is definitely related to the deteriorating security environment.

However, we still believe that it is possible, and it is still important. The number of nuclear arsenals today is some 14,000, and 90% of those are still owned by the two nuclear superpowers. Especially because the security environment is deteriorating, we still believe that, number one, we need to preserve some of the key bilateral—and of course multilateral—nuclear arms control and disarmament agreements. At the same time, however, because of the new challenges that we see, we encourage the two countries, and potentially other nuclear powers, to engage in new kinds of instruments and agreements which will make the world a more secure and safer place.

There have been enormous improvements in nuclear disarmament. That has stalled, and as a result there is frustration on the part of non-nuclear weapon states. The Secretary-General always talks about disarmament and non-proliferation being two sides of the same coin. We cannot continue to hold non-proliferation obligations unless we also continue to make progress on disarmament obligations.

I should mention one positive bit of news, which is that under the NPT there is something called the P5,³ or the N5,⁴ process. All nuclear-weapon states under the NPT have a mechanism for dialogue. We were recently informed by all the P5 states that the P5 process is continuing, most recently in the margins of the First Committee in New York. There is a

³ The five permanent members of the UN Security Council.

⁴ The five official nuclear powers (the five permanent members of the UN Security Council).

rotating co-ordinator role, and under the facilitation of China, this year's co-ordinator, they had a substantive engagement on how to move forward with the Article 6 obligations, but they also started to discuss nuclear doctrines, their security doctrines, and some of the measures that they could pursue potentially on transparency, and so on. I heard this from all P5 representatives separately, so I believe that interesting conversations and discussions are still taking place among the P5, and this will be one of the most important elements when it comes to the grand bargain put on non-proliferation and disarmament going together.

Q6 Baroness Coussins: In the light of what you have just described, can you say what you meant by your statement earlier this April when you said that you thought 'a new qualitative arms race' was emerging? Could you say exactly what you meant by that phrase?

Izumi Nakamitsu: One of the key issues we see is that all nuclear-weapon states are engaged in what they call modernisation programmes. They will always have to maintain nuclear arsenals and make sure that their safety is assured, but at the same time there is talk of, for example, lower-yield nuclear weapons, which are, by the way, still much bigger than the Hiroshima and Nagasaki type of weapons. Just now I talked about the 88% reduction in the number of nuclear arsenals, but perhaps, not just in terms of quantity but qualitatively, nuclear-weapon states might be in fact increasing their nuclear capability. That is why we say that a potential new arms race is starting. It is related to modernisation programmes.

We also want to counter the perception that nuclear weapons are potentially useable weapons. We need to make sure that the non-use principle, which has been upheld ever since Nagasaki, will still be there. I have appealed to all nuclear-weapon states bilaterally, and in my public statements, referring to the Reagan-Gorbachev statement to the effect that 'a nuclear war cannot be won and must never be fought'. That principle must be upheld so that we will counter this perception that nuclear weapons might be used on the battlefield.

The Chairman: Lord Hannay, would you like to ask your next question?

Q7 Lord Hannay of Chiswick: Could you comment a little on the broad political relationship between sustaining the Non-Proliferation Treaty itself and the Ban Treaty⁵ and the way they interact with each other. Is this a helpful interaction, or is it in fact making the problems over implementing Article 6 of the Non-Proliferation Treaty even worse by polarising the debate between the nuclear and non-nuclear powers—although quite a few non-nuclear powers are also not prepared to sign the Ban Treaty because, for example, they are members of the NATO alliance? Could you comment on that? Could you also give a view on whether the way ahead is in some great leap forward like the Ban Treaty, or 'global zero', as President Obama referred to it, or is it more through incremental, step-by-step, rather modest changes or developments which could be built

⁵ The Treaty on the Prohibition of Nuclear Weapons (TPNW)

into successive Review Conferences?

Izumi Nakamitsu: Thank you for the question. I get asked this question many times. On the Ban Treaty and the Treaty on the Non-Proliferation of Nuclear Weapons, as I mentioned already that was a demonstration of many countries wanting to have visible progress on Article 6 implementation. Because that has stalled, there is now very strong frustration on the part of those non-nuclear weapon states.

On our position in the United Nations on these two treaties, of course, the Ban Treaty has not yet entered into force; it will do so only after 50 ratifications are ready, but they are not there yet—I think today there are 19 ratifications. Our work will be to make sure that the political pressure that the Ban Treaty proponents wanted to create in order to make progress on the implementation of Article 6 will be positive political pressure rather than turning into negative political pressure.

It is true that, because of the Ban Treaty, deeper divisions were made between the core countries that were promoting the Ban Treaty and those that opposed it. Our appeal was that they must stop attacking the Ban Treaty so that the divisions do not deepen. In fact, the divisions created between the two groups will need to be bridged now; that will be an important element for the success of the NPT Review Conference. My impression is that the core countries that have negotiated and promoted the Ban Treaty movement are fully aware and that they will now also focus on the success of the NPT 2020. In fact, many of the countries that were part of the core group of the Ban Treaty are now also appealing to bridge the difference between the two groups to make sure that the complementarity between them will also be understood by the opponents of the Ban Treaty.

There was very strong motivation on the part of non-nuclear weapon states to call for an understanding of the catastrophic humanitarian consequences of nuclear weapons. What pushed the Ban Treaty movement was what they called the humanitarian movement. It is now important also that the catastrophic impact of nuclear weapons is fully understood by the nuclear-weapon states, and that it will also be taken into consideration when they talk about political commitments to Article 6.

On whether a step-by-step approach or the ban movement is correct, as the United Nations we do not take sides. The Secretary-General and I always appeal to member states to remember that there is no one path to the elimination of nuclear weapons. If a country is not part of the Ban Treaty, we ask them to please redouble or triple their commitment to nuclear disarmament. There are many other things that countries can do to pursue that. An example of the Secretary-General's calls is that, for example, early entry into force of the CTBT⁶ would be an enormously important step towards nuclear [weapons] elimination, and early entry into negotiation on the Fissile Material cut-off Treaty—the FMCT—would

⁶ The Comprehensive Nuclear-Test-Ban Treaty (CTBT).

be another. It is not just the Ban Treaty that is there as a path towards nuclear [weapons] elimination; member states can take many other different avenues and steps. We therefore appeal to all member states to take their own steps to redouble their efforts, visibly, towards elimination.

My colleague is mentioning, as I already mentioned, that the Secretary-General's agenda suggests some practical steps. One important practical way to prepare for a nuclear-free world—which, by the way, is still a shared vision of all the member states—which has already started and is progressing, is to develop a standard for verification of nuclear disarmament.

We still do not have a standard for verifying nuclear disarmament, although work has started this year. There are many ways of moving closer to a world free of nuclear weapons. Therefore, we appeal to all member states: 'If you are not part of the Ban Treaty movement, let us see redoubled efforts to move towards that shared objective, in a different but visible way'.

The Chairman: Mr Tudor, feel free to contribute if you want to.

Q8 Lord Purvis of Tweed: Good morning. To follow up on that, one element of this treaty, Article 1(g), prohibits any 'stationing, installation and deployment'. Have there been any indications since this treaty was tabled and opened for signatories that any countries which are not in their own right nuclear powers but which have nuclear weapons stationed in their countries are reconsidering their position on stationing?

Izumi Nakamitsu: Sorry, do you want the names of countries?

Lord Purvis of Tweed: No, you mentioned that there has been an opening of the scope for a bridge, and I wondered whether one of the elements of that was movement from countries which do not possess the weapons in their own right—they are not nuclear powers but have nuclear weapons stationed on their territory. Has there been any movement of countries in that category, or no movement at all, since this treaty was tabled?

Izumi Nakamitsu: I am not informed in detail about the domestic political discussions on those issues in different member states, but one thing that is very clear is that the discussions on nuclear weapons, in many European countries in particular, have become more active. One country that participated in the negotiations of the prohibition treaty was the Netherlands. At the request of the parliament, as I understand it, it voted against it at the end of the negotiations, but still it was part of the negotiations. Most of the countries that negotiated that particular treaty paid compliment to the Netherlands, which, although it was a country that cast a vote against it, was still part of the negotiations and that was very much appreciated. I do not know today whether any of those countries in alliances with nuclear-weapon states are considering being part of this new treaty or not. But one thing is clear: I have started to

receive many parliamentary delegations that are studying the new treaty, so the domestic political discussions appear to have become more active. But I do not know whether there are any movements in a practical way.

Q9 Baroness Anelay of St Johns: Good morning. Against the background of an internationally deteriorating security environment that you have described, you are helping us to look at the way in which we need better to enforce existing agreements and make them more real. I want to follow up something that Lord Grocott raised, which is other opportunities where we might be able to try to overcome some of the more obvious disagreements between the more powerful powers, if I may put it that way. You have talked about existing agreements. What about ones that are being proposed? I am thinking not of the Ban Treaty, which we just dealt with, but rather of the Fissile Material Cut-off Treaty and the issues that that raises. Is there any realistic prospect of those negotiations eventually coming to the right decision?

Izumi Nakamitsu: I very much hope so. I keep encouraging members of the Conference on Disarmament to start negotiations. Canada has played an important role in making the substantive elements of the future negotiations ready. It is definitely ready to be negotiated and for states to enter into negotiations, but that will require political will on the part of members of the Conference on Disarmament. We will definitely continue to encourage members to start such negotiations. That would indeed be a hugely positive step, also in the context of the NPT.

Baroness Anelay of St Johns: To follow that up, in what way are you making those efforts to encourage? In my previous existence as a Minister for the UK in UN negotiations, I was able to see some of the more difficult obstacles that we as States Parties could put in the way. How do you go about your persuasion?

Izumi Nakamitsu: Continuous engagement. As you know, one country is very much against the start of negotiations. I continue to have dialogue on a regular basis with that country, but I also ask others to impress upon those countries that might not believe that negotiations are possible. So there is continuous bilateral engagement, and encouragement in public speeches. Canada's efforts demonstrated that the substance is ready; all that is now required is the political will. I would rather say that member states can also help to create that political will so that the negotiations can start. I appeal for the UK's assistance in that regard as well.

Q10 Lord Hannay of Chiswick: On the Fissile Material Cut-off Treaty, of course you are aware of the precedent that was established at the time of the Comprehensive Test Ban Treaty, when the issue of the deadlock in the CD⁷ was transferred to the General Assembly, and that unblocked the matter. Is there any possibility at any stage of this being applied to the Fissile Material Cut-off Treaty?

⁷ The Conference on Disarmament.

Izumi Nakamitsu: It might be a possibility. As you say, it has happened in different treaties. For example, the ATT—the Arms Trade Treaty, so not in the nuclear field—was also negotiated in the General Assembly, and no one seemed to have a problem with that. But when the nuclear weapons prohibition treaty was negotiated in the same way, it became, as you know, a huge political issue that has created a deep division between the member states of the United Nations.

When it comes to issues so closely linked to matters of national security, consensus decision-making is still important, which is why many countries still consider the Conference on Disarmament to be an important platform. That is also why we have, from the secretariat, also tried to work with the members of the CD so that it can come out of stalemate. This year we achieved perhaps a halfway position. The members of the CD have returned to substantive discussion; it is still not negotiation, but they have been working on those discussions. We very much hope that, in 2019, these substantive discussions in working groups will again be replicated. The United Kingdom will have the presidency of the CD next year, in 2019, so the role that the UK can play will again be quite important in that regard as well.

The Chairman: Ms Nakamitsu, we are moving into a new world environment. I believe that you can get instructions on YouTube on how to assemble a nuclear weapon—or maybe it is on Google. In any case, these things are hideously easily available in a way they were not five, 10 or 20 years ago. This creates many new considerations, and Lord Reid wants to ask you some questions on that.

- Q11 **Lord Reid of Cardowan:** Good morning. Earlier, in response to Baroness Coussins, you touched on the question of the modernisation of nuclear arsenals. I am interested in your view of to what extent the development of new technologies affects the established non-proliferation or disarmament regimes. What I mean by that is that almost all of our national infrastructure now, in most countries, often in the name of progress, modernisation and efficiency, is adopting or is underpinned by cyber, industrial operating systems, new software and now artificial intelligence, with quantum coming up on the rails. That is meant to modernise systems and make them more efficient, but we now know that, alongside that, it makes these systems much less secure, much more vulnerable, more unstable, and more open to threats from outsiders, whether they are nuclear states or not. I am interested not so much in the process but in how you see that that affects, or perhaps undermines, the efficacy of the present disarmament and non-proliferation process.

Izumi Nakamitsu: Thank you very much for that question. Yesterday afternoon I was at RUSI and had fascinating discussions with some of the experts in this country on the nexus or linkage between those new technologies and nuclear disarmament issues. It is definitely becoming one of the most important issues to be looked at. One thing I must say is that it is still not possible to comprehend the full impact of those new technologies on nuclear weapons; much of it is still speculative, and there

are probably negative and positive aspects. The positive aspects will be that those new technologies can be applied, for example, to the verification of nuclear disarmament and non-proliferation, so technologies can definitely have a positive impact as well. But they also potentially have different types of negative impact that we need to start putting our heads together to consider.

Some of that, as you mentioned, is the potential insecurity that cyber, AI and other technologies can pose to nuclear weapon systems, but also some of those technological innovations could potentially lead to problems such as unclear attribution resulting in unwarranted responses, and therefore there might be a risk of unwanted escalation. There are also issues relating to greater autonomy and the remote operation of weapons systems, potentially creating a casualty-free type of warfare and therefore lowering the threshold for the use of force. So there are all sorts of different types of potentially negative implications.

From an operational point of view, there is definitely a potential fear of losing faster because of machines making decisions very quickly, and therefore many of those perceptions related to weakened deterrence could potentially contribute towards states having a 'use it or lose it' mentality. So there are definitely a lot of different implications that we might see with regard to how decisions are made on the potential use of nuclear weapons.

I will put it this way: those new issues in the 21st century should also be important areas of review for States Parties to the NPT. A lot of academic people are now looking into those, but they have to be brought to the policy circles to think through the potential implications, which is why the review cycle, again, will be quite important. It is one of the new issues that should be reviewed in the context of nuclear non-proliferation and disarmament.

Q12 Lord Reid of Cardowan: I find the coverage that you gave reassuring. I will ask you specifically on the question you mentioned, which is the difference between a human-made decision and the increasing tendency towards machine learning and artificial intelligence. Over the last 30 years, there have probably been up to a dozen cases where, if procedures had been followed and machines programmed to follow them, there would have been a nuclear exchange. There are one or two famous cases where the human being decided that the information and instructions they were getting from the machines were wrong—thank God. What specific attention is being given to that problem, which is now far greater because of the proliferation of that type of decision-making by machines?

Izumi Nakamitsu: Again, we think it is still speculative, but progressively, because the machines run at such fast speeds, human commanders come under huge duress when it comes to decision cycles. Yesterday at RUSI, one of the experts expressed concern that it would be humanly impossible for human commanders to make decisions as there is not enough decision time for them to compete with machines' decision-

making. So there is definitely that aspect of the speed of decision cycles which is challenging modern warfare and how decisions are and potentially will be made.

The Secretary-General has come out with a clear position, which is that humans must always retain control over the use of force, especially lethal force. That is particularly applicable to other sets of issues, such as lethal autonomous weapons systems. The very idea of machines being delegated to make a decision on behalf of humans to take human life is, as the Secretary-General said, politically unacceptable and morally repugnant, and therefore it should be banned. But on the nuclear side, if these things are combined, there will be serious challenges with regard to how decisions are made. That is why those issues need to be discussed between states, including some of those experts who understand the implications of those technologies. Again, we encourage multi-stakeholder analysis and discussion on those issues; it is definitely becoming one of the more urgent issues for all of us to reflect upon.

The Chairman: Thank you. Ms Nakamitsu and Mr Tudor, we have kept you for an hour, answering our questions, and we have received immensely detailed and expert replies. We are extremely grateful to you. This is a very good start to our inquiry. You have certainly raised in our minds a number of other issues that we will pursue. Sometimes I think some of us watch too many James Bond movies, in which it is apparently quite easy for some undesirable non-state actor to seize control of nuclear weapons and blow up the world. Let us hope that it is not quite like that and that the NPT is strengthened in the future review. Thank you very much indeed for being with us.