Too Close for Comfort: The Threat of Near Nuclear Use

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Gill Bennett

Thank you all very much. I think that certainly gives us all something to chew on. We're going to move into the question period now.

Question 1

Can I ask a question of Eric Schlosser? I read your excellent book. It largely concentrates on the United States, partly because that’s what you decided to do and partly because it's an open society. The information is around. What do you think about command and control in places like India and Pakistan?

Eric Schlosser

I'm quite worried about command and control throughout the world where there are nuclear weapons. One of the things I failed to mention in my initial presentation that I think is crucial to keep in mind, there is a tendency to view nuclear weapons as symbols, as symbols of national power. The symbolism of nuclear weapons is essential for deterrence and yet these are machines and they’re highly complex machines.

At the end of my book, I look at the rate of industrial accidents in different countries as a rough measure of their ability to manage complex technological systems and the rate of industrial accidents in Pakistan and in India are significantly higher than in the United States. It’s unclear whether Pakistan maintains weapons fully assembled. There are some sources that have told me they now do. If that is the case, that increases the danger enormously.

When the fissile material of a weapon is stored miles away from the rest of the weapon, there's a large degree of nuclear weapon safety. Once a nuclear weapon is fully assembled and mated to the weapons system, it’s a very dangerous thing. My book is extremely critical of the management of the American arsenal and yet we have not had an accidental detonation. We have not had the theft of a weapon and yet we've come close.

I'm very concerned about North Korea. I'm concerned about India and Pakistan, particularly because these are two countries... The United States and the Soviet Union hated one another, but they hated one another from a long distance. There's something about the hatred between neighbours that is a little bit more intense. With India and Pakistan, the flight time of a missile is much shorter than the flight time of a missile between the United States and Soviet Union. That means their command and control systems are inherently less stable and would need to be used on much shorter notice.

Question 2

You have given us the problems. You have indicated that there is no practicable solutions, because of failings in human nature. Does this mean that we all face ultimate nuclear death, either accidentally or by design?
Gill Bennett

I think you should all have a brief word on that. Heather, why don’t you start?

Heather Williams

So you’re saying do we all face the risk of nuclear death? Well, yes, as long as nuclear weapons exist. There’s a risk that one might be used, is the short answer. I think the longer answer I would try to give is that you see obviously disarmaments going rather slowly and the way that it’s going, I think from the US perspective is something I probably should have talked about in this reports coming out, is that the US just as one example is trying to find this balance between reducing its reliance on nuclear weapons as a path towards disarmament and changing its own strategic thinking about the value of these weapons.

How do you value that, but at the same time value the people who have to work on these weapons and who have to maintain them and keep them safe as long as they exist? It’s a very difficult balance to strike, and I think that as these reports are showing, one of the biggest challenges is the morale. It’s the lack of morale and a lot of the servicemen and women that this report interviewed, people that I know I’ve spoken to, they say, ‘What’s the incentive to work on intercontinental ballistic missiles (ICBMs) when the president comes out and says nuclear weapons don’t matter and…’ He didn’t say they don’t matter, that he’s promoting disarmament.

So it’s still this very delicate balance that you have to find to reduce reliance but to still keep them safe.

Dr Ronald Sturm

Again, I’m not an expert but I’ve been in contact with experts about nuclear risk and it’s correct. I also can confirm from other experts’ points of view that as soon as you have a risk of nuclear weapon use, one day it will happen. So we do face the threat of nuclear weapon use, detonation of nuclear weapons.

Eric Schlosser

I’m going to be the Pollyanna here. I’ve spent the last now seven years immersed in the minutiae of nuclear risk and I don’t feel apocalyptic. I don’t feel that we’re doomed. But I’m deeply concerned and I think there needs to be much greater public awareness and there needs to be a new international movement committed to eliminating nuclear weapons.

One of the physicists who I interviewed, who was very involved in the American nuclear weapons programme for decades said to me, ‘If you had told me after the destruction of Nagasaki that another major city would not be destroyed by a nuclear weapon for almost 70 years, I never would have believed it.’ There were so many people during the Cold War who felt, even at the highest level of the American government, that a nuclear war was quite possible, so the fact that the Cold War ended without a nuclear exchange, without
the destruction of a city by accident or by deliberate use of a weapon is a remarkable thing.

To me, it shows that the use of a nuclear weapon is not inevitable. Bad as things are with Russia right now, and I think that there is the beginnings of a new Cold War, today the United States has reduced the size of its arsenal by about 80 per cent from the Cold War height. Russia has many fewer weapons. These weapons are no longer specifically targeted at one another’s cities.

I think there are many grounds for optimism and again and again, you see in the history how close we came to the brink and then pulled back. But the greatest danger I think right now is ignorance, apathy and complacency. There’s absolutely no room for any of those when it comes to nuclear weapons. I’m hoping that my work, and I know Heather’s work is part of the process of bringing awareness to this issue and making people focus on this so that we will never lose a city anywhere in the world to a nuclear weapon.

**Question 3**

I feel that our politicians and leadership of the main political parties in the UK, they’re all in denial on this question. They [indiscernible] go ahead, but then [indiscernible] spend probably £100 billion of taxpayers’ money on it without addressing any of the security and safety questions whatsoever. So I think that unless this message is got across to these people who are going to be running this country for the next as far as we can see, I think it’s just going to carry on and on and on until we do have an accident and then we’ll have the problem that the gentleman over here raised.

My question though is to do with the, sort of a complementary problem with the humanitarian question, which is to do with... Even if we were to disarm, dismantle all of the nuclear arsenals across all of the world, we’d still have a big problem with nuclear materials management and we’d have the problem of the legacy of the manufacturing process of all the nuclear weapons including all of the uranium contaminated areas where uranium was mined for the weapons.

My question is, should part of the agenda for the humanitarian conference and beyond the conference in Vienna also look at the environmental racism that infects this problem? Where most uranium must be mined on indigenous people’s land. Most of these people have not been given a fair deal, and there’s still a huge radiation and contamination problem in all these areas. Should that be added onto the agenda?

**Dr Ronald Sturm**

It will be at least mentioned at the conference. The focus of course is the humanitarian consequences of nuclear weapon use, but we also have a segment on nuclear weapon testing, not use in a military context but testing context. Then we expect that one or two of the panellists will also make reference to other environmental effects of production of nuclear weapons. It’s not the focus, but it will be mentioned.
**Question 4**

I have a question which is slightly geopolitical in nature, but I wondered... Eric said that he thinks we need to make a new effort on nuclear disarmament. I wonder whether there's a threat that we may be moving towards nuclear rearmament, with as you say the origins of a new Cold War, there are noises in the Russian press saying that actually America has disarmed much faster than we have and we've now achieved strategic nuclear parity and people in the West do worry about the tactical nuclear weapons side of it as well. You hear rumblings about that.

I don’t know who’d like to take it, but whether there is a sense now that actually the momentum is going out of disarmament and there’s a risk that we start moving in the opposite direction? Perhaps a slightly more focused element for Heather, on this question of the Russians pulling out of the nuclear security treaty, what the implications of that are.

**Heather Williams**

I’ll take the first question. I think that the sense that there’s a rush to rearm, I don’t think that really takes in the whole picture, because yes, Russia is increasing its reliance on nuclear weapons, but that doesn’t reflect the whole international community. I think there’s a huge divide, a growing divide between the nuclear weapons states and the non-nuclear weapons states on this issue.

You see at the NPT, in particular. You see a lot of the non-nuclear weapons states pushing more for disarmament and so I think that’s an important thing to keep in mind. The NPT does rely on all these other countries. It doesn’t just rely on those five. I think there’s a growing sense of frustration among them about lack of progress in the conference on disarmament in the NPT.

I was just kind of pushed back slightly on that. I’m sorry, the second one? The implications of Russia pulling out of the nuclear security summit. Well, that’s a really great question. First, to the question about the future of the nuclear security summit process, I think that it does... I mean, the process was already kind of in a questionable state before this happened. We know 2016 will probably the last one at the presidential level, but what comes next? It looks like it may turn out to be something at a lower level. It may be working groups focusing on different issues. Nuclear security isn’t just about Russia. There is still obviously an enduring threat of nuclear theft within Russia, so you would want them to be involved.

I think it’s a George Kennan quote which goes something like, ‘Always leave the door open for the Russians. They’ll come back.’ I think nuclear security could be one good example of that, where you continue with the process and you keep the door open. You keep the opportunity there and eventually the Russians will come back.

To the bigger issue, that’s just at the nuclear security level. I think at the more geopolitical level, it’s pretty... I mean the break-up, the disintegration of a lot of these arms control efforts, it’s pretty dire, in particular because you’re losing some transparency into the Russian system. I mean, I don’t want us to be all doom and gloom.
The upside is that New START (Strategic Arms Reduction Treaty) is still implemented. There are still inspections going on as part of New START. That is a good story in the midst of everything else going on, but these other agreements falling apart, it really does sow further distrust between the two sides.

Eric Schlosser

I think that the rhetoric coming out of Russia on nuclear weapons which really is reminiscent of the early 60s Cold War, is going to hurt Russia more than any other country. It is not in Russia’s interests for there to be a new nuclear arms race with the United States and the timing of the Russian rhetoric could not be more inopportune. Right now the US Congress is going to be debating how far we need to modernize our nuclear forces.

Both Russia and China have recently modernized their nuclear forces. The United States has very old equipment. Now the last time that Russia engaged with an arms race with the United States, we outspent them, we out-built them and that was the end of the Soviet Union. I think it’s not in Russia’s interest for there to be a nuclear arms race.

Aside from that, this whole measurement of nuclear strength has in retrospect proven to be absurd. During the Berlin Crisis in the early 1960s, and the Cuban Missile Crisis, the United States had a vastly larger nuclear arsenal than Russia and many more delivery systems than the Soviet Union did. Yet when at the highest levels of our government, we were contemplating a first strike against the Soviet Union, there was a realization that even if the Soviet Union could hit the United States with five, six, seven hydrogen bombs, that was too many.

Studies of the Strath Report found in Great Britain that a dozen hydrogen bombs detonated on the west coast of Great Britain would essentially destroy this as a functioning society. China made the decision during the Cold War really never to build more than perhaps 200 nuclear weapons, but the United States and the Soviet Union got into this arms race and I’ll wrap this up very quickly.

There is the danger of seeing these machines as symbols and not as weapons. The early studies in the United States suggested that we needed perhaps 150 to 200 atom bombs to destroy the Soviet Union as a functioning society. That was about 1948. Within two decades, we had 32,000 nuclear weapons. The Soviet Union eventually had more than 40,000 nuclear weapons. These were seen numerically as a sign of a country’s power and yet realistically, how much is enough? How many do you really need to turn a tack? How many do you really need to destroy your enemy?

I really don’t think there’s any danger whatsoever of Russia having any kind of nuclear superiority over the United States. I think the rhetoric that’s been coming from Russia is not useful and ultimately will hurt Russia more than any other country.

Question 5

Thank you very much. I very recently returned from Pakistan, where the country’s challenges in securing the revenues it should secure from its taxation system are
Too Close for Comfort: The Threat of Near Nuclear Use Q&A

intimately linked to the power of the army, of the military industrial complex. My question for Mr Schlosser and Ms Williams is accepting that the security and safety of the arsenals is primarily a human and morale issue, are there any indications at least in Western countries, that the new generation gradually being introduced or in the case of the US about to be put into plan to be introduced, are going to be inherently safer by a significant degree over the current and particularly the older generation of weapons? And for Dr Sturm, my question is, you've seen a slight turning of the tide in relation to greater awareness on the part of various organizations. Are there still pockets of resistance in the international security and diplomatic and technical communities which simply don't take all this seriously enough? Thank you.

**Dr Ronald Sturm**

If I understand the question correctly, it’s the involvement of governments in the humanitarian initiative. It’s true it’s not global, but at the last joint statement, we had 155 countries that supported the statement in the general assembly, in the first committee of the general assembly which is the disarmament committee. But we have to take into account that a number of countries simply don’t participate because they’re not there, they don’t have the capacity, the resources to participate.

But it is also true that the nuclear weapons states, the nuclear possessor states are not part of the initiative. In the past, they also had not participated, at least the nuclear weapons states recognized under the NPT, had not participated in the Oslo and the [indiscernible] human impact conference. But we’ve had participation of Pakistan and India, so they were very much open to discussing the issue.

They were pointing out that in the regional security context, they still needed to rely on nuclear weapons, but they were very open to engage constructively with all the other nuclear weapons states, with civil society. That is a novelty. In the other forums that we have, civil society cannot act in the same way as say, civil society can interact in the humanitarian conferences with governments. So the discourse is much more open and much more constructive than in the formal structures that we have.

For Vienna, we still expect Pakistan and India. We also had the announcement that the US will come. So we are waiting for the announcement by the UK. We are waiting for the announcement by France. We’re hoping for announcements by Russia, China and the other countries that possess nuclear weapons.

We are trying to be very transparent in the organization of the conference. We have approached all the countries, particularly also the countries that possess nuclear weapons. We’ve also approached North Korea, for example. They’ve taken note. We’ve been talking to Chinese, to Russians, to everybody. So everybody is aware of what we want to do, what to expect from the conference, that we hope to have a very constructive engagement with all the countries, with all the experts, in order to create momentum to move us, to move the world forward on the path towards global zero, to a safer world without nuclear weapons. But we’re still waiting for confirmation from a number of key countries.
**Gill Bennett**

Heather, can I ask you very briefly on the safety issue? I know it’s a big issue, but we’ve got a lot of people lined up.

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**Heather Williams**

Sure. Just very quickly on the new weapons that are coming in. I would say there are three areas where they’re going to try to improve upon. One of them has been on-going. It’s the life extension programme. There have been on-going efforts to modernize warheads, to always keep improving their safety and security measures. So that’s on the technical side.

Another issue that really needs to be improved on is the infrastructure and security of buildings. There have been break-ins in 2012 and an 80-something year old nun broke into one of these facilities. They’re 1960s buildings with still 1960s technology. They don’t have good security measures.

The last thing that I think these recent reports highlight, which you mention, is the need to improve morale. It’s this human factor that goes along with it. There’s going to be an increase in funding, 10 per cent increase in spending on the nuclear enterprise over the next five years. Money talks in the military, so that is going to increase awareness.

There are also more incentives. There are awards that you can win. They’re going to have a four star general in charge of it now. But one of the recommendations of our report that I’ll just end with was that you need to improve more and do more on education, training and awareness of nuclear weapons’ effects, specifically. That ties into the humanitarian impacts initiative. In our cases, it was somebody who should have made a call or protocol told them to do one thing, and he chose not to do it. He broke protocol simply because of awareness and really thinking about the catastrophic impact of these weapons.

So that’s another human element that I think can be incorporated into the modernization efforts.

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**Eric Schlosser**

I think in the American arsenal the nuclear weapons are much safer now than they were 30, 40 years ago. I’m not really concerned about the safety of the warheads and bombs. What concerns me are the weapons systems and the whole command and control system. The Minuteman 3 missile, which is our principal land-based missile, should have been retired 30 years ago. The B-52 bomber which is our principal nuclear bomber has not been built since John F Kennedy was president.

Even more concerning are the computer networks, communication system which – and this sounds like a bad Hollywood movie – may be vulnerable to a cyber attack. Then as Heather mentioned, there’s the morale of the people operating these systems. That’s, in the American arsenal, where I think the real danger is, is the interaction between human
beings and the system as a whole which may have vulnerabilities that no one is even aware of until one presents itself.

**Question 6**

Thank you all very much. I found your book absolutely fascinating, Eric. It is this issue that Heather has also referred to, of the kind of... The routines that have got into long after the weapons were really regarded as being important and long after they were being properly monitored, in a sense. It’s that morale issue that I want to just come back to, because with North Korea kind of sabre rattling and threatening to do a nuclear test, isn’t it the case that – and clearly that’s actually not going to deter the UN from undertaking its resolution – that these are no longer, nobody actually thinks that these are credible deterrents of any real kind.

But they are used as bargaining chips. What effect is that therefore having on the safety and importance to which the governments that have them actually give to the safety, security, morale kinds of systems? If they’re used as bargaining chips, isn’t it time that we got a universal comprehensive treaty to ban and eliminate them, treating all the nuclear arms states, whether inside the NPT or the four that are outside it, exactly the same under international law?

**Eric Schlosser**

I think as Heather noted, there has been a lack of proper attention to the American nuclear arsenal. In the United States, our military doctrine – and I’m not saying that it’s been fully carried out properly – has really been for the last few decades to try to minimize civilian casualties. The bulk of our investment has been in precision weapons. Nuclear weapons are the opposite of precision weapons. They may be effective at destroying a target, but they’ll have all kinds of collateral effects.

The weapon effects will spread far and wide from any detonation. So because they haven’t been seen as weapons we’re likely to use, there has not been the investment in the infrastructure and there has not been the same sort of concern about the morale.

I’m ambivalent right not about the treaty to ban all nuclear weapons, and in many ways, I’m avoiding getting involved in that issue and I’m trying to raise awareness about the technical aspects of it. I very much support the abolition of nuclear weapons and the reduction of the number of nuclear weapons in the world. I’m fully committed to non-proliferation and the treaty to ban nuclear weapons outside of the NPT, I’m not sure about. I think that the NPT needs to be fully enforced and reinvigorated and maybe the treaty system is a parallel track that can be carried out.

**Question 7**

What struck me about Mr Schlosser’s book, and about other books on the same subject, like Peter Hennessy’s, is the number of times that these near miss accidents or near miss incidents have taken the form of a situation where according to procedure a weapon should have been detonated but someone was bright enough to disobey procedure and not push the button, not to pass the warning on and so on.
It’s almost that the main safeguard is not the procedures and the technology but the culture in place, which is reassuring, but it’s also rather worrying because culture is not easy to measure. How do you ensure that this apparently successful culture, this apparently successful approach is still in place and will remain in place?

**Heather Williams**

I would just again emphasize the importance of education and awareness and training into nuclear weapons’ effects. That’s something that I think is missing. I can’t speak to the military side, but just to kind of the nuclear expert side. I’ve been working on nuclear weapons for a decade, and I didn’t really learn the facts of a nuclear detonation until a couple of years ago. It’s just something that doesn’t come up in your standard education.

You’re taught this is what deterrence is. This is what arms control is. You are never really shown pictures of victims of nuclear detonations. It changes how you think about that. I think that’s one starting point.

The other things you can do are to increase the decision-making time. In our report, that was something that we found, was that because people made decisions that bought them more time, that this allowed for prudent judgement to set in. We all do this, when you’re really stressed out and in that crisis thinking, you aren’t always making the most rational decisions.

If you have some time to just kind of let cooler heads prevail, and to get senior decision-makers involved, that can often save the day as well. This would have implications on the alert status of weapons.

**Gill Bennett**

We have one minute left. I’m just going to ask each of our panel to just give one last thought. Ronald, would you like to start?

**Dr Ronald Sturm**

I would like to pick up one thing which Heather stressed repeatedly. Education and training is important, for raising awareness. In fact, I was in contact with colleagues and friends from nuclear weapons states, and they say, ‘Yes, we know the effects of nuclear weapons. Hiroshima, Nagasaki, that’s the effects.’ But I think times have changed. Societies have become more interconnected, more complex. So if something happens far away, we here in Europe will be affected. That is a lesson which still has to be learned.

**Heather Williams**

Thank you all for coming. I hope we have good news [indiscernible] at the end of the day.
Eric Schlosser

If any city, anywhere in the world is destroyed by a nuclear weapon, it will lead to a major anti-nuclear movement in the world and a desire to abolish these weapons. Hopefully we can get that movement without that sort of catastrophe.

Gill Bennett

Finally, with my historian’s hat on, it seems to me that one of the things that’s come out is that, as you just referred to, in the 1950s and 1960s, there was a widespread public fear of mutually assured destruction or nuclear weapons, which has dissipated for all sorts of complicated reasons. It seems to me that one of the things that came out today is that you need not just better education and knowledge in the people who are looking after the weapons and in the decision-makers, but actually in the general population as well. Please, I ask you all to thank our speakers very much. We could have gone on for a long time, but I’m afraid that’s all.