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Subcommittee on Strategic Forces

COMMITTEE ON
ARMED SERVICES

UNITED STATES SENATE

HEARING TO RECEIVE TESTIMONY ON
REGIONAL NUCLEAR DYNAMICS

Wednesday, February 25, 2015

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The committee met, pursuant to notice, at 2:33 p.m. in Room SR-220, Russell Senate Office Building, Hon. Jeff Sessions, chairman of the subcommittee, presiding.

Subcommittee Members Present: Senators Sessions [presiding], Fischer, Nelson, Donnelly, and King.

OPENING STATEMENT OF HON. JEFF SESSIONS, U.S. SENATOR FROM ALABAMA

Senator Sessions: Okay, the subcommittee would come to order, and I appreciate the good witnesses that we have. And Senator Donnelly, thank you for your leadership and participation and dedication to helping us get this issue right.

I think we are close to having a bipartisan policy on this, which is not always possible in this body, but we have been able to operate pretty well as a subcommittee for quite a number of years, since I have been in the Senate now 18 years. Hard to believe.

Senator Donnelly: I have almost been here that long.

Senator Sessions: It seems like it. So we had -- our subcommittee on February 11th received a classified briefing on worldwide nuclear capabilities and threats, which revealed the scope and extent to which other nuclear powers are modernizing their weapon nuclear capabilities and increasing, it appears, reliance on nuclear weapons for their security.

Today's open hearing is meant to explore the implications of this global nuclear renaissance, renewal around the world, for U.S. nuclear strategy forces and declaratory policy. While the size and composition of the U.S. nuclear arsenal is driven primarily by the nuclear and

conventional might of Russia and agreements with Russia, the expansion of nuclear arsenals across the globe, coupled with a growing regional tension, suggests that there are other factors that should inform U.S. nuclear policy and strategy.

We divided the world between four prominent think tank scholars. You each have the world in your hands. Dr. Andrew Krepinevich will look at the Middle East. Dr. Matthew Kroenig will focus on NATO/Europe, while Dr. George Perkovich and Dr. Ashley Tellis will tackle Asia. They have been asked in general -- we have asked you in general to look out about 10 years. Where are we, and where should we go?

A summary -- and think about the following -- a summary of the nuclear capabilities and doctrine of the nuclear and potential nuclear powers in their region, to include the rationale for acquiring nuclear weapons, the likelihood for a nuclear escalation, and implications for nuclear proliferation, which is a real -- is reality, I am afraid.

Why is it important for the United States to manage nuclear stability in the regions, how difficult such a task might be? What might be the role of the United States during a regional crisis or conflict that could escalate to nuclear use? And finally, any recommendations for U.S.

national security policy, nuclear force policy, and nuclear doctrine derived from your analysis.

On the President's budget request, I think it is fair to say affirms a policy of modernization. We will be looking to make sure that we are sufficiently funded for that. We are behind, some would suggest, at about $2.5 billion from what we agreed to when we started this bipartisan effort several years ago.

So this will be the order, as I understand it -- Dr. Krepinevich, Dr. Kroenig, Dr. Tellis, and Dr. Perkovich. In that order we would go. All right.

Do you have any comments?

STATEMENT OF HON. JOE DONNELLY, U.S. SENATOR FROM INDIANA

Senator Donnelly: Thank you, Mr. Chairman. I want to thank Chairman and Senator Sessions for holding this hearing, which is to set the policy context for many of the issues that we face in the subcommittee this Congress. It follows on the footsteps of a highly successful hearing we had last year on how we deal with nuclear proliferation outside the U.S.-Russia context.

Let me also thank all of you for taking the time to testify here today. We very much appreciate your ideas, your thoughts, and your recommendations.

I want to concentrate first on the India-Pakistan nuclear question. This region seems to be an area where nuclear weapons are growing, with great potential for possible instability from a conventional conflict or from terrorism.

I also want to find out what these countries and their nuclear programs mean for the United States. We now know that India and China are developing ballistic submarines. What does this mean for the region and for the U.S.?

Finally, how can countries surrounding North Korea react to their nuclear program, and how can we help them?

Again, thank you for coming today. I look forward to the dialogue. And Mr. Chairman, off we go.

Senator Sessions: Dr. Krepinevich?

STATEMENT OF ANDREW F. KREPINEVICH, JR., PRESIDENT, CENTER FOR STRATEGIC AND BUDGETARY ASSESSMENTS

Mr. Krepinevich: Thank you, Mr. Chairman, Senator Donnelly, for the opportunity to be here today and offer my views on these important issues. I will try and summarize my remarks in the form of four brief points.

First, of course, looking at the Middle East, which is my area. Right now, there is only one undeclared nuclear power in the region. However, obviously, there is the issue of Iran. And while the negotiations to forestall Iran from becoming a nuclear power are in progress, from what is being reported in the press it seems likely that should an agreement along these lines be made, Iran will likely be a threshold nuclear power in 10 years. This perhaps is not surprising.

Given the current state of Iran's nuclear program, the immense cost Iran's leaders have invested in it, the great lengths to which they have gone to deceive the international community regarding their nuclear program, and the substantial advantages that would accrue to Teheran from possessing nuclear weapons, it seems unlikely that anything short of the threat or the use of force would deflect the current regime from its objective of achieving a nuclear weapons capability.

Second, while we can and should certainly hope for a

positive breakthrough in the current negotiations, hope is not a strategy. Prudence dictates that we contemplate what challenges we might confront should these negotiations fail to arrest Iran's progress toward the bomb.

Should Iran acquire a nuclear capability, which is certainly plausible within the 5- to 10-year timeframe that you have asked us to examine, the initial bipolar nuclear competition between Iran and Israel, I would think, would be far less stable than the bipolar nuclear competition that existed between the United States and the Soviet Union during the Cold War for several reasons.

First, given the state of relations between Israel and Iran, there seems relatively little chance that the two sides will engage in mutual confidence-building measures, things such as hotlines or arms control or intrusive inspection regimes.

Second, the geography of the two countries means that missile flight times between the two would be far less than even 10 minutes, whereas during the Cold War we had arguably 20 to 30 minutes warning time of an attack by the Soviet Union.

Third, particularly with respect to Iran, early warning systems and command and control structures are likely to be limited at best, which may lead one or both sides to place their forces on hair-trigger alert or to

extend nuclear weapons release authority down the chain of command, increasing the risk of unauthorized or accidental launch of a nuclear attack.

And fourth, the potential -- with the rise of cyber warfare, the potential to covertly insert cyber weapons into command and control or early warning systems may further reduce the confidence either the Israelis or especially the Iranians might have in their ability to detect an attack. And again, all this may push both sides, particularly in a crisis, to a very hair-trigger kind of nuclear force posture, if you will, one that would certainly compromise efforts to reduce the risk of a nuclear use.

My third point is that a nuclear-armed Iran, or even an Iran that is a nuclear threshold state, could trigger a proliferation cascade in the region. If there is an Israeli bomb and a Persian Shia bomb, one could surmise that for their security, Arab states and perhaps the Turks as well would seek a nuclear capability.

Certainly in the open press, there are reports that, given the relationship that the Saudis have with the Pakistanis, Pakistan could, for example, deploy nuclear weapons on Saudi soil, somewhat similar to the way that we have nuclear weapons on Turkey's soil right now. Only the difference could be that the Saudis would have de facto

control over those weapons. Or you could find an unraveling of the NPT regime, where the transfer of nuclear-related technology, the barriers to those transfers could become a lot lower.

In particular, even transfers of technology that do not relate directly to nuclear weapons themselves -- such as the ability to miniaturize a nuclear warhead to fit on a ballistic missile, or the ability to develop cruise missiles and place them offshore, say, offshore of Israel or to provide even less warning time than Israel would have today, or of course precision guidance that would enhance the effectiveness of these weapons -- could further destabilize an already unstable situation.

Fourth, should -- I am sorry -- should other states in the region besides Iran and Israel acquire nuclear weapons, of course, warning times could be reduced even further. Consider the example of Saudi Arabia and Iran. The two countries are very, very close together, obviously, and it seems difficult to imagine that you could have an effective early warning and command and control system to respond effectively to an attack.

So attack attribution may be difficult as well. In the sense that if early warning systems and command and control systems are limited, and there are four or five actors in the region and you are attacked, under certain

circumstances it may be very difficult in the wake of an attack to accurately determine exactly who the perpetrator was.

My fourth point is that these could have significant effects on the U.S. military posture. One effect, certainly, would be an Iran that can operate behind a nuclear shield may be an even more aggressive sponsor of terrorism proxy war than it is today not only within the region, but perhaps beyond the region as well. And should we decide to pursue a strategy of extended deterrence, we may run into difficulties as well.

As you have pointed out, other states are modernizing their nuclear forces. China and Russia modernizing their forces as well, moving particularly the Russians toward smaller-yield weapons, weapons with focused effects. This provides them with more options in terms of how they might respond in a nuclear crisis. Right now, we are denying our President the ability to have that kind of flexibility in responding to a crisis.

Second, as one senior Arab statesman pointed out to me when we were discussing the issue of extended deterrence, "You Americans talk about extended deterrence. You extend deterrence to protect your allies against the Russians, the Chinese, the North Koreans, and now prospectively the Iranians. But you keep reducing your nuclear arsenal. So

at the same time you are increasing your commitments, you are reducing your capabilities, and we find that a bit disturbing."

My final point is that Thomas Schelling once remarked that he felt it took U.S. strategists well over a decade following the introduction of nuclear weapons to arrive at a reasonably good understanding of the character of the U.S.-Soviet nuclear competition. And this was achieved only after long and dedicated effort by talented strategists such as Bernard Brodie, Herman Kahn, Henry Kissinger, Andrew Marshall, and Albert and Roberta Wohlstetter, to name but a few.

While considerable effort by many talented analysts has been devoted to assessing how we might preclude Iran from acquiring nuclear weapons, given current trends, it seems prudent to hedge our bets and work to obtain as best we can a sense of what it means for our security to live in a world in which these efforts fail to prove out.

This completes my summary, Mr. Chairman. Thank you.

[The prepared statement of Mr. Krepinevich follows:]

Senator Sessions: Thank you.

Dr. Kroenig?

STATEMENT OF MATTHEW KROENIG, ASSOCIATE PROFESSOR OF GOVERNMENT AND FOREIGN SERVICE, FIELD CHAIR OF INTERNATIONAL RELATIONS AT GEORGETOWN UNIVERSITY, AND SENIOR FELLOW AT THE ATLANTIC COUNCIL

Mr. Kroenig: Chairman Sessions, Ranking Member Donnelly, members of the committee, thank you for inviting me to participate in this important hearing. I am pleased to be here alongside my distinguished colleagues Andrew Krepinevich, George Perkovich, and Ashley Tellis. I would like to commend the committee for initiating this timely discussion of regional nuclear dynamics.

I have worked closely on nuclear issues both in and out of government for over a decade, and my recent work at Georgetown University and the Atlantic Council has focused increasingly on Russian nuclear capabilities and its implications for the United States and NATO. It is this subject on which I have been invited to speak today. In my opening remarks, I will make several brief points. More detail on each can be found in my written testimony.

First, I will begin with Russia's nuclear capabilities. Along with the United States, Russia is one of the world's foremost nuclear powers. At the strategic level, it possesses a triad of nuclear bombers, intercontinental ballistic missiles, and submarines.

In addition to its strategic forces, Russia retains an

arsenal of around 2,000 tactical nuclear weapons for battlefield use. This includes nuclear-armed torpedoes, depth charges, short-range missiles, air-to-surface missiles and bombs, and surface-to-air missiles for use in air defense.

Russia has made the thoroughgoing modernization of its nuclear forces and the development of new nuclear capabilities a national priority, even in difficult economic circumstances. Among the new capabilities is Russia's recent test of an intermediate-range ground launch cruise missile. This development is of particular concern because it is in violation of Russia's commitments under the 1987 Intermediate-Range Nuclear Forces, or INF, Treaty, the only arms control treaty ever to eliminate an entire class of nuclear weapons.

Second, turning to Russian doctrine, it is important to emphasize that, unlike the United States, since the end of the Cold War, Russia has moved nuclear weapons toward the center of its national security strategy. Beginning in the early 2000s, Russian strategists have promoted the idea of "de-escalatory" nuclear strikes.

According to this "escalate to de-escalate" concept, Moscow will threaten or, if necessary, carry out limited nuclear strikes early in a conventional conflict in order to force an opponent to sue for peace on terms favorable to

Moscow. In addition, at least as telling as public documents are how military forces actually plan and exercise, and nearly all of Russia's major military drills over the past decade have concluded with simulated nuclear strikes.

In some ways, it is not surprising that Russia, as the conventionally inferior power, would consider the use of nuclear weapons early in a conventional war, as this is essentially the reverse of NATO strategy during the Cold War, when it faced a conventionally superior Soviet Union. Nevertheless, Russia's nuclear capabilities and strategy pose a serious threat to the United States and our allies, which brings me to my third point, the possibility of escalation.

The ongoing conflict in Ukraine is very much a nuclear crisis. Throughout the crisis, President Putin and other high-ranking officials have repeatedly issued thinly veiled nuclear threats. Moreover, these threats have been backed up by an explicit brandishing of Russian nuclear forces at a level we have not seen since the end of the Cold War. The message is clear. The West must not interfere lest things escalate to catastrophic levels.

If the conflict in Ukraine were to escalate or President Putin were to rerun his playbook of hybrid warfare from Ukraine against a NATO member, the United

States could find itself in a direct military confrontation with Russia. In the event of such a conflict, Russia will likely issue nuclear threats in a bid to force NATO capitulation, and if on the losing end of a conventional conflict, Moscow may conduct a limited nuclear strike in an effort to de-escalate the conflict. To be sure, these scenarios may not be likely, but nuclear deterrence is, by definition, about unlikely, but possible and terribly dangerous contingencies.

This brings me to my final point, recommendations for U.S. nuclear strategy and posture. So long as nuclear weapons retain such a prominent place in Russian strategy, the United States and NATO must retain a policy of, and a serious capability for, nuclear deterrence. At a minimum, U.S. nuclear doctrine needs to be clear and firm that any use of nuclear weapons against the United States or an ally would result in a nuclear counterstrike.

In addition, the United States should leave on the table the possibility of a nuclear response to a strictly conventional Russian assault against a NATO ally. The reason for eschewing a no first-use policy is not that an early nuclear response would be necessary or automatic, but rather because there is no reason to assure Russia that this would not happen.

Moreover, the possibility of nuclear response to non-

nuclear attack has a critical assurance element, as NATO's easternmost neighbors would prefer that any Russian attack be deterred by the threat of nuclear response, rather than needing to wait for a costly and lengthy conventional war of liberation. To make these threats credible, the United States and NATO must maintain a sufficiently large, flexible, and resilient nuclear force, including capable nuclear delivery systems and a supporting infrastructure. I, therefore, urge this body to fully fund the much-needed modernization of this country's nuclear forces and infrastructure as planned.

In addition, the United States should upgrade its homeland and theater missile defense systems. While missile defenses could not meaningfully blunt a large-scale Russian nuclear attack, an upgraded system could better provide a defense against, and thus complicate Russian calculations for, a more limited strike on the United States or its allies.

The United States must also make sure that it has a credible response to any Russian battlefield use of nuclear weapons, and it is not at all clear that it does at present. Yields of strategic warheads may be too large for a credible response to a tactical strike, and their use would risk escalation to a catastrophic strategic nuclear exchange. The B61 gravity bombs in Europe are out of range

of potential conflict zones in the East without redeployment and/or refueling, and the aircraft in which they are delivered would be highly vulnerable to Russian air defenses.

American B-52 bombers and nuclear-armed air launch cruise missiles are based in the United States, reducing their utility for deterrence and assurance missions in Europe.

The United States should, therefore, consider additional options to deter Russian nuclear aggression, assure regional allies, and if necessary respond to a limited Russian nuclear strike. The options could include -- I will just list them quickly -- placing lower-yield warheads on strategic missiles, training European crews to participate in NATO nuclear strike missions, forward basing B61 gravity bombs in Eastern Europe, rotationally basing B-52 bombers and nuclear air-launched cruise missiles in Europe, developing a sea-launched cruise missile, or designating the planned long-range standoff weapon, LRSO, for delivery by both air and sea.

The United States must also convince Russia to return to compliance with the INF Treaty and, if that fails, to prevent Russia from gaining a military advantage from its violation. Washington should, therefore, study the development of new intermediate-range missiles and their

deployment to Europe. It should also consider the deployment of cruise missile defenses in Europe to defend against Russian nuclear aggression.

Following through on some of these proposals would reverse U.S. and NATO policy of reducing reliance on nuclear weapons as an objective in and of itself. This policy was justifiable so long as Russia remained cooperative, but given increased Russian nuclear aggression, we no longer have the luxury of reducing reliance on nuclear weapons for its own sake and arguably never did.

Some of these proposals, if adopted, would also run counter to promises made to Russia in the NATO-Russia Founding Act of 1997. But Putin has already violated key provisions of this act, and it would be foolish for the United States to be constrained from taking action necessary for its national security by a document that Russia routinely ignores.

Nuclear weapons are tools of great power, political competition, and they remain the ultimate instrument of military force. With long-dormant tensions among the great powers resurfacing, nuclear weapons will again feature prominently in these confrontations, and the United States must be prepared to protect itself and its allies in these conditions.

I know this committee will help ensure the maintenance of the strong American nuclear forces that have undergirded international peace and security for nearly 70 years.

Thank you for the opportunity to be here today. I look forward to your questions.

[The prepared statement of Mr. Kroenig follows:]

Senator Sessions: We got notice that a vote has already started. I am inclined to think that we should just break because your statements are very important, and I would like to hear them. And so we will take a break for the vote.

I guess that is the signal that the vote has started. So why don't we just go and make a quick return in 10-12 minutes for one vote. So we will be back.

[Whereupon, at 2:54 p.m., the committee recessed, to reconvene at 3:07 p.m., the same day.]

Senator Sessions: Okay, we will reconvene. That was not as long as sometimes it takes. Senator Donnelly and King got their business done and got out of there.

Senator Donnelly: We have young legs.

Senator Sessions: Let us see. Dr. Tellis, thank you for coming again, and now we look forward to hearing from you.

STATEMENT OF ASHLEY TELLIS, SENIOR ASSOCIATE, CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE

Mr. Tellis: Chairman Sessions, Ranking Member Donnelly, members of the committee, thank you for the invitation to testify today.

My testimony focuses on a segment of the Asian nuclear space, namely China, India, and Pakistan. My written testimony looks at different dimensions of the nuclear programs in these countries, but in my oral remarks I am going to focus mostly on the drivers that have pushed these countries to modernize their nuclear programs. And I want to end by identifying some contingencies that would be of importance to the United States and the challenges for protecting the U.S. strategic deterrent as we go forward.

I would be grateful if you include my written statement into the record.

Senator Sessions: We will make all of your statements a part of the record. Thank you.

Mr. Tellis: Thank you.

Let me start by noting that although China, India, and Pakistan are modernizing their nuclear deterrence comprehensively, only China's nuclear expansion is driven fundamentally by concerns about the United States. China aims to create a nuclear force that is sufficiently immune to both U.S. nuclear and conventional weapons systems,

while also intending to deter direct U.S. attacks and coercion against China, while contributing to deterring U.S. intervention on behalf of its allies in any regional crisis, especially in East Asia.

Satisfying these multiple aims requires China to have a substantial and a survivable deterrent, one that is also intended to deter India, Russia, Japan, and other regional powers simultaneously.

India's nuclear program, which historically began in response to China's, is intended today primarily to correct its abject vulnerability, vis-à-vis Beijing, while also deterring Pakistan, India's two principal adversaries. The principal thrust of India's nuclear weapons modernization, therefore, is focused on increasing the range and survivability of its delivery systems primarily to deter China.

Pakistan's nuclear program, which is perhaps the fastest-growing program of the three countries, is aimed, as it has been from the beginning, at checkmating India's conventional superiority. In contrast to both China and India, which view their nuclear weapons primarily as second-strike systems, Pakistan's nuclear doctrine conceives of its weapons as being used first, mainly in response to a conventional attack by India. Hence, Pakistan has invested heavily in developing a diverse set

of capabilities ranging from the strategic to the tactical.

The bottom line is that nuclear weapons programs in the greater South Asian region are alive and well and will be so for some time to come.

There are two sets of contingencies that arise from the expansion of nuclear weapons in this part of the world. The Chinese effort to undermine U.S. extended deterrence in East Asia, especially with respect to Japan, Taiwan, and our other treaty allies, and the risks to nuclear security in Pakistan remain direct threats to the United States.

Pakistan's support for terrorism against India under cover of its nuclear weapons program and the possible employment of nuclear weapons in an Indo-Pakistani or Sino-Indian conflict, while undoubtedly serious dangers, remain indirect threats to U.S. interests. To my mind, there are three implications for U.S. strategic forces that flow from these realities.

First, U.S. strategic forces remain the ultimate backstop for American security and, hence, must be modernized and maintained at New START numbers, at least at New START numbers, given the prospect of continued nuclear expansion in Asia. In other words, given the onerous U.S. extended deterrence commitments in Europe and Asia, U.S. nuclear parity with Russia must not diminish to a point where parity with China appears within reach.

Second, the United States must maintain the requisite superiority of the total force that permits it to achieve conventional success in regional contingencies, while consciously integrating nuclear options into current planning for successful power projection in Asia, especially in the efforts now underway to defeat China's anti-access area denial programs. U.S. regional allies need the assurance that the growing Chinese nuclear capability will not paralyze the United States or prevent it from coming to their defense in a crisis.

Third, the desire to reduce the salience of nuclear weaponry in global politics is estimable. But that desire should not extend to devaluing the utility of nuclear weapons for deterrence, damage limitation, and sometimes use against difficult conventional targets. Maintaining this balance is admittedly challenging, but successful deterrence inevitably involves the management of difficult and complex contradictions.

Thank you, Mr. Chairman. I will be happy to answer any questions.

[The prepared statement of Mr. Tellis follows:]

Senator Sessions: Thank you very much.

Dr. Perkovich?

STATEMENT OF GEORGE PERKOVICH, VICE PRESIDENT FOR STUDIES, CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE

Mr. Perkovich: Thank you to the chairman and ranking member and Senator King.

I am just going to follow on my friend Ashley's comments because we are both working on Asia and so burrow into them a little bit. In my written testimony, I hit on five themes. Here, I am just going to focus on a couple of them.

The first is to highlight that the threat perceptions and nuclear requirements and policies of the states in Northeast Asia and South Asia are causally linked to each other and to what the United States does. And in my written testimony, I have got a diagram of this dynamic here, but I think it is often lost sight of.

And you can think of it in terms of two triangles. So you have the U.S., Russia, and China in a triangle. The U.S. benchmarks historically what it needs in terms of what Russia had. More recently, we have been benchmarking our requirements to what China is doing.

China, in turn, calculates what its strategic requirements are in terms of not only U.S. nuclear capabilities, but also U.S. cyber capabilities, U.S. strategic conventional capabilities, and ballistic missile defenses. So they are all feeding off each other, and it

is not just nuclear for nuclear.

There is a second triangle, which includes China, India, and Pakistan. And so these two triangles meet in China. As Ashley talked about, China is the benchmark for India's requirement, what it needs in terms of nuclear warheads and delivery systems. And as already mentioned, though, that target that China presents is being affected by China's effort to balance the U.S.

India is also balancing against Pakistan -- to deter Pakistan. And China is helping Pakistan. So India has got to be thinking about China, Pakistan, and the help that China provides Pakistan.

Pakistan looks at India and calibrates what it needs, but Pakistan is also looking at the U.S. and India collaborating and say, "Okay, what we need is also the product of this U.S.-India collaboration."

So you have got these two triangles operating in a very keen way, and so I think one take-away for U.S. policymakers and the policymakers in the region is to realize that anything that we or they do, in terms of capabilities or actions, will affect all of the others. And that would include force modernization. It is not an argument against doing it, but it is to understand that there will be reverberations beyond China, but into South Asia with whatever is done.

Second point I want to highlight is that -- and Ashley referred to it also -- the most complicated challenges facing U.S. nuclear policymakers today are about extended deterrence. And in particular, reassuring Japan that the U.S. has the resolve and the capabilities to defend it against armed attack from China or any other threat.

Now, extended deterrence is often conflated with extended nuclear deterrence. They are related, but they are not necessarily the same thing. It is tempting to believe that the potential use of nuclear weapons always strengthens extended deterrence, but the issue is actually problematic, and that is true in Asia as well as in Europe.

Potential use of nuclear weapons in an escalating conflict can indeed strengthen the potency of our guarantee to the countries that we protect. But the very destructiveness that the specter of nuclear weapons portends also can weaken the resolve of our own society and the protégé's society. So the classic line, should we trade Los Angeles for Okinawa? Or if you are in Japan, if the U.S. uses a nuclear weapon against China, China is going to nuke us.

And so this can be divisive and can be exploited by a potential aggressor, and I think we have been seeing this with what Russia has been doing in Ukraine. That you make a nuclear threat to see if you can split either the

guarantor from the protégé or weaken the resolve of the protégé. So it is not an automatically positive deterrent effect. It can, in fact, be divisive and a weakening one.

But there is also an opposite problem in extended deterrence. And that is if the guarantor's resolve is unquestioned -- our resolve in this case -- in the face of a countervailing nuclear threat, a nuclear moral hazard may be created. It is like a finance company whose managers believe that the government will bail them out if they get into ruinous losses. The protégé may take risks in its policies towards the adversary, feeling that the nuclear threat that we offer to defend them will bail them out from any crisis. That is a moral hazard.

The other moral hazard, which we also see in finance, is that relying on the magic of nuclear deterrence, our allies may under invest in conventional capabilities. We can save a little money here because we are counting on the nukes to do the trick. And that is like banks that do not keep adequate reserves to cover their commitments. And we have seen that historically in NATO, and we have seen it historically with Japan.

So all of this comes together, I believe, in the situation in the Senkaku-Diaoyu Islands, where Japan and China are in a sovereignty dispute over these uninhabited islands, and where there is a potential of crisis or

escalation either on purpose or by accident. In 2010, they had two ships collide accidentally. Now, you have got two highly nationalistic, kind of strongmen leaders in both countries, and if you have one of these collisions, it is easy to imagine a potential escalation.

Obviously, you want to do deal with that by diplomacy, but it is worth thinking through the implications of a potential conflict and having the conventional capability to prevent China from being able to change the facts on the ground.

It is a conventional issue that they not be able to set foot on one of those islands and hold it. Because if you have to fight to take it back, and you get into that kind of potentially escalating conflict and we are not prevailing, someone in this town or someplace else is going to say we ought to make a nuclear threat. That is what nuclear deterrence is for.

But then it raises the issue, is it credible or advisable for the U.S. to think about first use of nuclear weapons, because that is what we are talking about here, over some islands that 99 percent of the U.S. population has never heard of and could not find on a map? It seems to me that is an invitation for a real disaster in terms of U.S. credibility and extended deterrence.

And the way to prevent it is with convention

capabilities, both ours and the Japanese, and through exercising those capabilities. And the current U.S. nuclear posture, in terms of the numbers envisioned in New START, is totally sufficient to deal with that kind of scenario. It is not a nuclear problem.

Last thing I would say is on South Asia, picking up on what Ashley said. Here, I think there really are challenges for U.S. policy that have not been well addressed. And the dynamic Ashley is talking about is an unprecedented one, where you have -- the conflict starts with a terrorist attack. Then India makes a conventional military response. Pakistan says it would respond with battlefield nuclear weapons. And India, which does not have battlefield nuclear weapons, said they will respond with massive retaliation.

There is no theory to deal with that. All the theories of deterrence do not deal with the possibility that terrorism is this thing that starts it. And the theories and practices about how you deal with terrorism have never been applied with antagonists with nuclear weapons.

So we are all kind of groping in the dark in this challenge, and I think it would behoove the committee and the Congress and others in the U.S. Government to ask, if we do get into a situation of a conflict, and the U.S.

detects Pakistan to be preparing nuclear weapons for use against India -- where there are a lot of Americans at all times, where American investment is very heavy, we have got a very strong Indian-American population in the U.S. You see Pakistan getting ready, what does the U.S. do?

And I do not think we have prepared for that. We have not thought about it. Do you intervene? How? If not, what do you tell India? How do you do it?

If, God forbid, a conflict like that happens, I am willing to bet that the Senate, or the Congress more broadly, will conduct an inquiry to ask: What did the President know? And when did he or she know it? And what did they do to prevent it?

And we are not taking the steps now to analyze how you work back from that kind of scenario. It has nothing to do with U.S. forces. U.S. nuclear forces are irrelevant to this problem, but it is a clear and present problem, I would submit, that ought to be addressed.

Let me stop there. Thank you.

[The prepared statement of Mr. Perkovich follows:]

Senator Sessions: Well, those are thoughtful and great issues to discuss. Thank you for sharing your thoughts and leadership with us.

Dr. Krepinevich, Henry Kissinger testified a few weeks ago before the Armed Services Committee, and he was pretty animated -- and it is in his book, too -- about what he considers an alteration of our initial negotiating policy with Iran, to accept them getting within months of having a nuclear weapon. And he expressed the concern at the hearing that this creates a circumstance where Turkey, Saudi, Egypt may feel if they are within months of weapon, then they practically have one, and they need to have one.

What thoughts would you have about that danger and what we can do to prevent it?

Mr. Krepinevich: Well, certainly if I were a neighbor of Iran's, and we are looking at a short sprint to a nuclear weapon, if the declared goal now is to keep them a year out, that assumes, I believe the Deputy Secretary of State said, an unprecedented level of intrusion and verification to keep them at that level. The question is, can we achieve that?

And so far, I think the history has been that the cheaters often seem to have an advantage. Even President Reagan, who was famous for saying "trust but verify," during his presidency, the Soviets were cheating on the ABM

Treaty and on the biological conventions treaty.

Our success in trying to impose constraints on countries like North Korea and Iran has been limited at best and unfortunate at worst. So I think it would be very difficult, as I said in my testimony, absent a clear threat of military action or military action, to get the Iranians, at this point, given the investment they have made, the trouble they have gone through, the damage to their reputation they have sustained, to deflect them.

And you can see that there are clear benefits to Iran from having a nuclear capability, both in terms of regime preservation, which I assume is probably their top priority, and then advancing their aims throughout the region.

Senator Sessions: Well, I think, so if you are a Saudi Arabian, and you think you have the ability to achieve a nuclear weapon through research or money, then if you think your adversary is within months, 12, 9, I believe -- actually, I think Kissinger used the word "9 months," then you could have a proliferation.

And how dangerous would it be if we ended up with Turkey, Saudi Arabia, and Egypt with nuclear weapons?

Mr. Krepinevich: Well, I would say it is certainly --

Senator Sessions: Anything that our nuclear arsenal should be altered to deal with that?

Mr. Krepinevich: Under those circumstance where, say, you had a nuclear-armed Saudi Arabia next to Iran, as I mentioned earlier, the ability to have an effective attack warning system and command and control system would certainly test the limits of technology, test the resources of both countries, both in terms of financial and in terms of the manpower resources.

During the Cold War when we were placing the Pershing 2s into Western Europe, the Soviets at the time, according to the documentation that has come out, actually explored an option called the "dead hand," which is -- if you have seen the movie "Dr. Strangelove," it is an automated nuclear response mechanism, because they were concerned that the Pershings would give them such little warning time that they might be faced with a decapitation attack. They eventually moved toward something I understand called "perimeter," which is semi-automated.

In this case, I think what we might be able to offer countries like Saudi Arabia, hopefully, is, to the extent that we can, effective attack warning. Perhaps a willingness, hopefully, to dissuade them from acquiring their own nuclear weapons by offering extended deterrence. The possibility of missile defense, although I am skeptical about missile defense for a couple of reasons.

One is in the Cold War, we had nuclear plenty before

we had missile plenty, and we went to MIRV systems. And so the problem we faced right now is opposite, in the sense that Iran has missile plenty, but not nuclear plenty.

So in a short-range attack on Saudi Arabia, if they did not need -- if they could go beyond the Shahab-3 missiles and use some 1s and 2s, they may create a problem for us in terms of having a lot of decoys -- maybe 4 or 5 missiles with nuclear warheads on it, 20 or 30 missiles in the attack overall, and force our missile defenses to actually engage them all. And we would be at the losing end of a missile defense proposition.

Senator Sessions: You do think providing a nuclear umbrella to our allies in the region is something that would have to be considered?

Mr. Krepinevich: Certainly, I think so. Again, this is -- I think there is a lot of virgin strategic territory here.

Senator Sessions: And would we then need to move advance locations for our nuclear weapons, if that were to occur?

Mr. Krepinevich: Again, I would want to think through the issue. I was about to say that if you had, as you said, multiple states -- Turkey, Saudi Arabia, Iran -- and just for a thought experiment, each had 50 nuclear weapons, then if you are the Saudis, you may have to plan against an

attack by 100 nuclear weapons. You cannot have parity with everyone in an end-state competition.

To the extent the United States provides nuclear guarantees, that could offset some of the fears that, in fact, even though I am inferior numerically in terms of nuclear weapons, the United States can help make up the difference.

So, again, we have never really, to my knowledge, gotten into a detailed analysis of end-state nuclear competitions, especially when warning times are extremely short, and as George points out, you are looking at other factors, such as the ability of conventional weapons to substitute for nuclear weapons, advanced defenses, cyber weaponry, and so on.

Senator Sessions: Well, it is definitely a complex thing. It seems to me that if you have got now Iran, Saudi Arabia, other nations with nuclear weapons, you have got four nations perhaps who would use nuclear weapons if their existence is at threat. So you have increased danger of a first use in the ways that we maybe have not thought through.

Mr. Krepinevich: Certainly, you have more triggers -- fingers on the trigger. I would be interested in my colleagues' reaction, too.

One thing, of course, that concerns some folks is the

Saudi-Pakistani connection. And should Pakistan, for example, deploy weapons in Saudi Arabia, certain countries -- Israel included -- might view that as weapons, even though they are under nominal Pakistani control, actually being under the de facto control of the Saudis. While, at the same time, what is the view of India? Does India view this move as an effort by Pakistan to create strategic depth in terms of its nuclear forces?

And so I think George was getting to this point. You cannot just segment these particular problems by region. In some cases, they are transregional problems.

Senator Sessions: Thank you. These are so complex, but I think we better give up my time to Senator Donnelly. I have hogged too many minutes.

Senator Donnelly: Thank you, Mr. Chairman.

Dr. Perkovich, you know we have spoken to General Campbell recently, and he talked about how relations between he and the Pakistan army are better than they have been in a very, very, very long time. And then you flip to the nuclear side, and you have Pakistan increasingly perceiving the U.S. and India to be cooperating together, and it puts them in a tougher spot, Pakistan feels.

How do you balance off this?

Mr. Perkovich: It is a great question, and you might get a good debate going with Ashley and me, but I do not --

Senator Donnelly: On the one side, we are supposedly working better than ever, and it is like going down the hall into another room, and you have a completely 180 perspective.

Mr. Perkovich: I think I work back from -- and this does not go over really well in Pakistan, but sometimes, you know, you just stick with something if you believe it is true.

Senator Donnelly: We just want to know what you think.

Mr. Perkovich: The good news is India has no desires for any Pakistani territory or anything in Pakistan. So, the "threat from India" is only in response to Pakistani aggression in India, or terrorism in India.

That is a basis for the U.S. in our relations with the Pakistanis to say, look, if we can cooperate in getting at the terrorism problem within Pakistan, what you are worried about from India goes away, number one. And number two, the influence that we might have in India can help reassure you of that, which, by the way, did happen in 2001 and 2002. Ashley was out in Delhi in the embassy there -- there was a crisis -- where the U.S. was trying to stay both of their hands.

And so there is a basis, if you can get at the terrorism problem. If Pakistan cannot commit itself to

working against the terrorists that have operated in India, then there is not much we can do to reassure them, but I would argue there is probably not much we should do to reassure them because that really is a problem.

Senator Donnelly: Let me ask you -- and this is not exactly on the nuclear topic, but do you see it as a long-term game changer what happened with the Army Public School in Pakistan recently, to their children, when the attack took place?

Do you see them having like a long-term commitment to eliminating the Taliban, or is that something that you think 6 months, a year from now may fade away?

Dr. Tellis?

Mr. Tellis: It is a difficult question to answer at this point, but what we have certainly seen is that the Pakistan army seems to be much more energized about going after terrorist groups that are wrecking havoc within Pakistani society. I think that is welcome, and of course, it has been long overdue.

The question that cannot be answered today is whether the Pakistanis will now extend this effort to groups that do not directly threaten Pakistan but threaten others -- groups that threaten Afghanistan, U.S. forces in Afghanistan, and India. Thus far, we have seen a very energetic Pakistani response to their own state enemies.

And all things being equal, we would want to see that rather than the absence.

But I think we would declare victory only when Pakistanis begin to think of terrorism in a sort of broader context and begin to focus their attentions on all terrorist groups, and not pick and choose between groups that support their interests and groups that support them.

Senator Donnelly: How strong are their security efforts around their nuclear weapons? How good are their programs and processes, as you have seen, compared to other nations?

Mr. Perkovich: On this one, I could say nuclear weapons are the most secure thing in Pakistan. That is good news and bad news.

Senator Donnelly: Well, I am the tallest person in my family.

Mr. Perkovich: I am the shortest in mine.

Senator Donnelly: Everything is degree.

Mr. Perkovich: But the issue is, is that -- that is not the problem I would focus on precisely because it is one that they care about more than anything, the army. They have capabilities, and capabilities are acquirable to deal with that. So they may not be perfect at it, but they are on the job, and there is a reason to think they can manage it.

The problem that is much harder is, again, the terrorism leads to the war, which leads to escalation. So it is not the loss of nuclear weapons, it is actually the use of nuclear weapons in a conflict to me is a more probable scenario. And it has implications for us that are not as dire as a nuclear terrorist attack on the United States, but that are pretty dire when you start going through the calculation. And so that is the unattended-to problem that I think we need to focus on.

Senator Donnelly: Thank you, Doctor.

Thank you, Mr. Chairman.

Senator Sessions: Senator Fischer?

Senator Fischer: Thank you, Mr. Chairman.

I would like to open this up for any of you if you would like to make a comment on it.

I would like to know what influence we have as a country if we see the confidence of our allies being eroded over what they would view as the protection of a nuclear umbrella that we would have in the region.

And also what influence we would have over trying to prevent proliferation amongst our allies in different regions, when we see conflicts continuing to grow, and the ability of our allies to acquire nuclear capabilities, either on developing them on their own or being able to purchase them elsewhere.

If I will open that up.

Mr. Kroenig: Well, it is an important question, and I think our extended deterrent depends in part on our capability. Do we have the capability to follow through? And it also depends on the credibility. Will we do it?

And so going back to the question that was asked of Dr. Krepinevich on Iran, I think that is one of the things that would make deterring a nuclear-armed Iran very difficult and would make reassuring our allies in the region very difficult, would be the lack of U.S. credibility in that situation. After three successive U.S. presidents said a nuclear-armed Iran is unacceptable, Iran will not acquire nuclear weapons, and in the end, we allow them to acquire nuclear weapons.

A deterrence and containment regime would rest on U.S. threats. It would rest on U.S. threats to use nuclear weapons, if necessary, to stop Iran, to go to war with a nuclear-armed Iran. So who would believe that we would be prepared to go to war with a nuclear-armed Iran if we were not prepared to go to war with a non-nuclear Iran?

Also, capability is important. So when we think about Asia, and in Dr. Perkovich's testimony he said that China has a secure second-strike capability. We are vulnerable to China, whether we like it or not, and I think that is true. But we need to think about reassuring the allies in

the region as well, and something that the allies say is that they would be very uncomfortable with nuclear parity between the United States and China.

And so I think one way to square the circle is to make sure, even if China has a secure second-strike capability, to make sure that we maintain nuclear superiority over China. And I think that would be one way that China could feel secure that it is not going to be vulnerable to a nuclear strike, but also our allies in the region would feel confident under the American nuclear umbrella.

Senator Fischer: Thank you. Yes?

Mr. Perkovich: I will add a little to this.

A big part of the -- as Matt said -- of the reassurance, which goes to the heart of your question, Senator, you know, is our resolve. And this is something that you all would have to address, and it is a political issue. How much do you think the American people should be willing to sacrifice to defend Saudi Arabia? And how would you sell that politically?

Most of the terrorists that we have dealt with have an ideology that was propagated by Saudi Arabia, often in facilities funded by Saudis. The human rights record in Saudi Arabia is whatever it is. I remember the House years ago would not let the UAE buy a port facility in -- now we are going to talk about extending security guarantees?

So it is a political issue that is first and foremost. They do not doubt our military capabilities. They see what we can do with conventional. They saw what we did in Iraq, 3 weeks gone. The issue is political, and do they think that the United States would actually defend them to the hilt, life or death, is a political issue, much more than it is a hardware issue.

Senator Fischer: But do you not think it ties into a hardware issue when we know we need to modernize our arsenal, and we are not stepping forward and providing the resources necessary to do even that?

You know, it was said earlier that we are increasing America's commitments and decreasing America's capabilities. That was, in my opinion, a statement that hit the nail on the head. That is where the focus, I think, needs to be for us to be able to move forward with any kind of credibility in this world.

Mr. Perkovich: Absolutely. You absolutely have to modernize it, and everything else.

But if you are talking about, for example, in the Middle East, an Iran with 1 weapon -- or 10 weapons or 20 weapons -- whatever scenario you have about the U.S. force, which is at 2,200 now, it is probably going to be adequate as long as it is modernized, it is up to date. No one is questioning that.

Senator Fischer: But as we continue to make commitments around the world, though?

Mr. Tellis: Can I take a crack at that?

I think the point you are making is a very important one, and particularly in East Asia. The best anti-proliferation measure we have is the robustness of our nuclear umbrella. To the degree that the allies feel reassured by the resilience and the strength of the nuclear umbrella, their incentives to go the nuclear route independently are diminished.

Now, we have been blessed with allies, at least in East Asia, which are advanced industrial societies. If they choose to go the nuclear route, they could go there very, very quickly. And so it becomes extremely important for us to be able to maintain our nuclear assets in good repair so that we do not have to incur the temptation -- or they do not have to incur the temptation of going there.

Having said that, however, to my mind, when one thinks about this strategically, the real challenge actually is for us to beef up our conventional capabilities, so that if they ever get into a fistfight with some adversaries, we have the capacity to defend them conventionally, such that we do not press too strongly on our nuclear assets.

Let me put it this way. If you get into a fistfight in East Asia, I would rather be in a position where we are

so good and so robust conventionally that the other guy has to think about using nuclear weapons first. And if somebody else has to start thinking about using nuclear weapons first, then I have the nuclear reserves necessary to deter them.

If I end up being in a position where I have to use nuclear weapons first because my conventional capabilities are essentially less than robust, then I end up in a very, very uncomfortable and unfavorable world. And that is the world we want to avoid.

So we have to do two things simultaneously. You have to make certain that the big stick that is essentially our U.S. strategic reserves are kept in good shape. But it is our usable forces that we will employ in the course of any conventional problem that really have to be beefed up so that we never have to use our own nuclear weapons if we are forced to.

Senator Fischer: Thank you.

Thank you, Mr. Chair.

Senator Sessions: Senator King?

Senator King: You guys are full of good news.

[Laughter.]

Senator King: Dr. Kroenig, I have never heard anybody deliver such appalling information so calmly before. The sentence that I seized on that you said in your testimony

was, "The ongoing conflict in the Ukraine is very much a nuclear crisis."

That is a very important piece of information. I have been to probably a dozen hearings in the last couple of months where the issue of arming the Ukraine has come up, and for a while, at least 2 or 3 weeks ago, it was sort of the wise guy consensus. Oh, yes, this is what we have to do.

I sense there is a bit of a pause, but my question is do you see a danger of escalation, a risk of miscalculation? Given Russia's historic paranoia about the West, all those factors, give me your thoughts on arming the Ukrainians and danger of escalation.

Mr. Kroenig: Well, I think this feeds in a little bit to the point that Dr. Tellis was just making, where if you can deter an adversary at the conventional level or defeat the adversary at the conventional level, you may be able to prevent the conflict from escalating up to the nuclear level. So I am less concerned about Ukraine, in part because the United States does not have as great a stake in Ukraine.

What I worry about a little bit more is if President Putin were to kind of re-run this playbook against a NATO ally, against a Baltic State. Those -- if they are NATO allies, we would be compelled to come to their defense.

And in those kind of situations, if President Putin were making these same kind of nuclear threats, I think the stakes would be much higher because it is a NATO ally, and I think there is a much greater risk for escalation in that kind of scenario.

Senator King: I understand that. A point well taken.

I guess to get back to Ukraine, though, my concern is that we do not live in a static universe, and we cannot assume that our escalation is the end of the story. And to me it appears, as an outsider, that this is of more vital interest to the Russians than it is to us. Whatever we do, they can match and raise us. That, I said in a hearing the other day, if you are playing chess with a Russian, you better think at least three moves ahead.

Changing the subject briefly. The danger of a terrorist group getting a nuclear weapon somehow -- buying, stealing, whatever. Our whole theory of nuclear deterrence over the past 70 years has rested upon a premise of state actors who are somewhat rational and fear death.

What is our strategy to deal with people who are not state actors and want to die? Anybody?

Mr. Perkovich: It has to be prevention. The stuff we are doing and probably can always do well.

I mean, the good news on the nuclear piece of terrorism is to actually get a device that will go boom in

a very big way requires highly enriched uranium or plutonium, which exists in finite quantities in knowable locations. So it is a problem that governments can actually redress with some degree of confidence. It is not like ending poverty or a lot of other things that one might want.

Senator King: It is a technical challenge.

Mr. Perkovich: It is a technical challenge and a political will challenge. I mean, and this administration has -- especially with all the nuclear security summits has really applied a lot of heft and energy to it. There is a political will issue because there are a lot of states that need to do things that look at it and say, I mean, they are not going to go off in my territory if somebody gets a hold of it. So what is in it for me?

Senator King: Didn't the Pakistanis sell nuclear technology? Or somebody? One of their scientists, as I recall.

Mr. Perkovich: Yes. Yes. And so that is a real problem. He sold them to states, where there is a distinction. So Iran, North Korea, Libya did not know what to do with it. So it just all sat in a box someplace. And so terrorist capability to take all of that and integrate it and produce a weapon is a pretty good stretch. But they did not sell fissile material, which again goes to the

point of that.

So as problems go, this one is relatively manageable. It is not to say do not lose sleep over it, you know, but it is relatively -- and there is detection. A lot of money has been thrown at detection. It was a good business to be in to make detectors. And so, you know, a lot of effort has gone into it.

Senator King: Dr. Tellis, your thoughts? Are you as sanguine as your colleague?

Mr. Tellis: Well, I think we have been lucky so far that the kind of proliferation that occurred in Pakistan did not occur in terms of sales to a terrorist group. It occurred to states, and thankfully, as George pointed out, the states essentially did not do very much with it.

But to my mind, as one looks at the nuclear future, this is a risk to which we do not have good answers. Because you could imagine a North Korea-like entity down the line actually taking the fatal step of making certain that some of its nuclear capabilities go to pretty bad people. And these are non-state actors, could move to non-state actors.

Senator King: For whom deterrence is not a concern.

Mr. Tellis: For whom deterrence -- and to deter non-state actors who do not have a sort of certifiable address and who can do things under the cover of darkness is

really, you know, that is a hard case to deter.

And so what is the strategy? I think the strategy first has to be prevention as best one can. Second, you have to invest a lot in strategic intelligence. Because when people sell things, hopefully, they use telephones, they use computers, they use the Internet. These are things that, in principle, can be intercepted. So you need strategic intelligence.

And third, you need to have a government that is agile enough to, either unilaterally or in collaboration with the international community, to come up with political strategies of interdiction. And sometimes those political strategies may require military components.

So we have to work at all levels. This is not a problem susceptible to a single-point solution.

Senator King: Yes. Thank you.

Thank you, Mr. Chair.

Senator Sessions: Dr. Kroenig, just one of the things that we have talked about -- I do not believe it is fair to say we are acting on -- is the possibility of configuring our nuclear arsenal with more specialized weapons that might be usable in a circumstance that would be more targeted and less devastating or have other capabilities.

Have you given any thought to the wisdom of the United States proceeding in that fashion?

Mr. Kroenig: Well, this is an area where I am doing some research now, and I think I share your concerns that it does seem like the United States has a gap in its capabilities at present -- a very strong conventional force, a very strong strategic nuclear force, assuming we modernize it -- but I think a gap in terms of usable nuclear capabilities.

And so the scenario I laid out in my testimony was a conflict between the United States and Russia. Russia is planning and exercising to use nuclear weapons on the battlefield. And if that were to happen, if there were --

Senator Sessions: So they are planning and exercising in their war games the utilization of nuclear weapons?

Mr. Kroenig: That is right. Nearly --

Senator Sessions: Which is beyond what we do?

Mr. Kroenig: President Putin himself sometimes directly participates in these things.

So, if this were to happen, I am afraid that the United States does not really have a good response. We could try to fight through it with conventional capabilities. We could escalate to strategic nuclear warheads, but those are very large warheads. It risks the escalation to a strategic nuclear exchange.

It calls to mind something Dr. Henry Kissinger said in the 1950s, that we could be faced with this choice between

suicide or surrender. And his argument then was that we needed limited options in between. And I think we are in a similar situation now, where we need to think about what are the limited nuclear options we might be able to deploy in response to a limited Russian nuclear attack. Of course, with the point of deterring that attack in the first place.

Senator Sessions: Dr. Krepinevich, do you want to comment on that?

Mr. Krepinevich: Yes, to add to what Dr. Kroenig said, and in a sense to draw on what George Perkovich said, if you look at the what some people are calling the second nuclear age or the second nuclear era, it is the ability to assess the balance, if you will, is much more difficult because, as George said, of the introduction of advanced precision weapons, advanced defenses, cyber, and so on.

Also because you are looking at a different range of contingencies. You know, a lot of times during the Cold War, we would look at Armageddon. You know, a massive Soviet attack on the United States, and if you could not deter it, it would be the end of the world. We are looking at a wide range of contingencies. And we are also, I think, looking at a different -- needing to, in a sense, to reconstruct the escalation ladder, and I think that is what a number of these questions are getting at.

If somebody is competing with us at a particular level in the conflict in the Ukraine, as Dr. Kroenig said, could we escalate horizontally? Do we have an advantage in doing so? Can we escalate vertically or horizontally to a different geographic area?

And absent knowing that, absent knowing whether you have the ability to escalate and not jump -- not need to jump a number of rungs to -- I think Dr. Kroenig's point is to using large-yield, large-scale nuclear weapons, you may preclude yourself from having important options.

And I think, personally speaking, the fact that we have not matched what some of our competitors are doing in terms of exploring the options for relatively low-yield weapons or weapons with focused effects limits our options, limits the President's options. I am not talking about more nuclear weapons. I am talking about a greater range of nuclear options, if you will.

And one thing I would just add, apropos of what was said earlier in terms of, I guess, what Dr. Tellis said, is I think absolutely what he is talking about, and George as well, about having a strong conventional capability so you have options there. I had conversations with Prime Minister Abe's -- one of his senior advisers. And he got very emotional and said, "If we were ever hit with a nuclear attack by North Korea, do not tell me you are going

to use precision weapons against the North." He said, "You better use nuclear weapons."

Okay, if that is the case and if he really means it, I would rather have the President have the option of using weapons that -- perhaps if they are nuclear but have, you know, very focused, very limited effects, you know, that were necessary to do the job.

Senator Sessions: Dr. Tellis, I see you nodding on that. You got a brief --

Mr. Tellis: Well, imagine a world where you have an ideal U.S. nuclear deterrent. And to my mind that ideal world would be one where every U.S. nuclear weapon essentially has a selectable yield, and that selectable yield can essentially be --

Senator Sessions: A selected yield?

Mr. Tellis: A selectable yield, where you can actually dial the yield. And where that selectable yield can be organized or orchestrated essentially electronically without someone having to actually go to the weapon and jimmy it up.

I think if you could do that, you give the President, even within the constraints of the current delivery architecture, a whole range of options.

Senator Sessions: Well, this is kind of important to us, I think, because we are in a stratified, a calcified

process here.

So what you are suggesting is it might be better that if we cannot do as you said, altering it in that fashion but actually could create a multiplicity of weapons with different capabilities that would give the President more option, you think we would do well to consider that in our budgetary and defense posture?

Could all of you all give a quick -- I see that Dr. Perkovich --

Mr. Tellis: Yes.

Mr. Perkovich: There are going to be big consequences that, of course, you would want to weigh beyond the budget. I mean, because Matt was talking about lack of capability in Europe, but we are spending -- you tell me -- I think it is $8 billion to $10 billion to modernize the B61. And so if that is irrelevant, why are we going to spend $8 billion to $10 billion to modernize the -- so you could save money from that and put it into something else.

But to do that kind of development and procurement, beyond the budgetary issues, will have reverberations within NATO. You want to reassure the alliance. You will split NATO in many ways. So most of the Western European states will -- in likelihood would protest that. Their parliaments would be mobilized. The Germans would be mobilized. So you would have a political --

Senator Sessions: Their theory is it would be more likely to be used, and so you should not have that option?

Mr. Perkovich: Exactly. Exactly. And so you get a political fissure within NATO. I am not saying not to do it. I am saying you would want to calculate that.

For every Japanese official who is worried -- and I have talked with them, too -- like Andrew posits about a threat, you have also got a big constituency in Japan that is anti-nuclear, pro-disarmament, and so on. So you would have to deal with the implication of that.

You would have to deal with how the Chinese would react. How this is a new capability, so they are going to have to counter it. So how do they counter it? How does their counter affect what India does? How does that play back into Pakistan? And so all of that kind of assessment would have to go into a decision to change course.

Now, you may still want to do it, but it is not risk free is what I would say.

Senator Sessions: Well, I thank you. I have heard a little bit of that.

Senator Donnelly?

Senator Donnelly: Thank you, Mr. Chairman.

Mr. Kroenig, I want to be careful here because I do not want to go into classified areas. But we have low-yield weapons as well, don't we?

Mr. Kroenig: We do, yes. We have the B61 gravity bombs in Europe, as George pointed out. My concern there is that if Russia used a single nuclear weapon, there are some problems with using the B61 to retaliate.

Senator Donnelly: There are other missiles, too, though, right?

Mr. Kroenig: There are some air-launched cruise missiles that are based in the United States. But given that they are based in the United States, I think that causes some limits in terms of their ability to function as a deterrent and an assurant in Europe.

And I should point out that in my testimony, I do not recommend any specific changes, but I think that we should consider these changes. You know, we are essentially in a third phase in our relations with Russia.

Senator Donnelly: Well, at what point when you look at Putin, what he is doing, is he trying to change the discussion?

They have lost a lot of their territory. They want to be viewed in a different way. When you look at him -- and you know, a lot of people could make a lot of money trying to figure this guy out. But when you look at him, do you think he reasonably thinks that he can use manageable nuclear weapons and not wind up in a total conflagration of his country?

Mr. Koenig: Based on the way they plan and exercise, I think there is a belief that they could get away with a tailored use of nuclear weapons in the event of a major confrontation with NATO.

So, again, it is not a likely scenario, but nuclear deterrence is really about, you know, dealing with these unlikely, but dangerous situations.

Senator Donnelly: My expectation is that if Mr. Putin thought that, he would be quickly corrected. And that it would cause one of the most dangerous situations ever seen in this world, and I would think that reasonable Russian leadership would remove him if he tried to move forward with that kind of thing.

Mr. Koenig: We could hope for that. I think it would be better to have the capabilities in place to deter that kind of response in the first place rather than have them tempted to go down that route and get into a larger confrontation.

Senator Donnelly: So you mentioned suicide. Do you think we are in a suicide or surrender situation in this country?

Mr. Kroenig: I think if Russia uses tactical nuclear weapons, we do not have a very good response, and so --

Senator Donnelly: With all of the materials we have, with the nuclear submarines we have, with the triad that we

have, you really believe that?

Mr. Kroenig: Well, as I pointed out, I think the problem with the triad is these are large-yield weapons, and so I think that would not have the maybe kind of tailored effect that we might want. And in addition, it raises the possibility that Russia would then retaliate with its own strategic weapons.

And so, again, I think having -- I think we have this gap in our capabilities, and closing that gap would provide a better deterrent.

Mr. Perkovich: Can you use cyber? I mean, why does it have to be nuclear? We have all sorts of other capabilities.

What is it that you want to take down, and there are all sorts of ways that you could take it down that do not even necessarily have to be a nuclear weapon.

So is there something that from a deterrent point of view -- and there may be -- requires it to be a mushroom cloud, or is it to actually incapacitate targets?

Mr. Kroenig: Well, I think these are exactly the kind of questions and discussions we should be having, and I have an ongoing study on this, looking at what the best responses might be.

But, you know, our current capabilities were put in place at the end of the Cold War. All of our assumptions

about the strategic environment at the end of the Cold War were that nuclear weapons -- the threat of nuclear use between major powers was low. The threat of conflict with Russia was remote, I think was the language we often used. And most people agreed that the strategic environment has fundamentally changed in the past year.

And so I think we need to think seriously about what that means for our capabilities. It is possible that we will say that everything we had been doing is exactly right and we should continue to do it, even though the strategic environment has fundamentally shifted. My hunch is that, given that the strategic environment has fundamentally shifted, we will have to change the way we do business.

Senator Donnelly: Let me ask you about follow-up on Senator King's question about providing defensive weapons to Ukraine. What do you think the effect -- and this would be for all of you -- what do you think the, you know -- I would like to get your ideas. What do you think Russia's response to that would be?

Mr. Kroenig: Would you like me to begin?

Senator Donnelly: Sure.

Mr. Kroenig: Well, I do think that we should provide defensive weapons to the Ukrainians. I think we should give them the ability to defend themselves. And it is difficult to know what Russia's response would be exactly,

but the purpose would be to raise the cost to Russia.

I think the worst thing for NATO would be if all of Ukraine fell to Russia. I do not think that is likely in the short term. But if all of Ukraine were to fall to Russia, you can just look at the geography. The rest of NATO would be very much in danger.

So I think doing little things to raise the cost to Russia are in the United States' interests.

Senator Donnelly: I am out of time, but if we could? Dr. Perkovich?

Mr. Perkovich: In principle, nothing would make me feel better than to colossally humiliate and emasculate President Putin. So, like, I think about ways to do it all the time.

My worry is it would have the reverse effect, and this goes to something Senator King said. Given the geography, given the way that he can operate free of a lot of the political, legal, and other constraints that we have, if one does something that provokes him to feel like he is going to feel even taller as he responds to providing defensive arms to Ukraine -- so he comes back harder and says, "We've never been in Ukraine, but now that NATO has come into Ukraine, we can actually put Russian forces into Ukraine," then you have lost that round. It is chess.

So then you come back -- at some point, we have to

confront the possibility of needing to put air power in as a way to deal with it. But then you run into air defenses and losing pilots.

So unless you have got it figured out, how you do all the escalation so that you kick his -- at every step of the way, then why gratify him by going another move that allows him to humiliate the West further, seems to me very counterproductive to an objective, which I would totally, totally share, which would be to humiliate him.

Senator Donnelly: Thank you, Mr. Chairman.

Senator Sessions: Well, let us finish up.

Dr. Tellis, do you want to have a brief comment on that?

Mr. Tellis: I share Mr. Perkovich's view, which is if there was a cheap and easy way to put Mr. Putin back in a box, I am all for it.

The problem we have is this. Whatever assistance we contemplate giving the Ukrainians, do we really believe that that assistance by itself will raise the costs to Russia sufficiently to cause Mr. Putin to cease and desist? If we believe that to be the case, there is a compelling argument for providing the aid.

If we believe, on the other hand, that this is only going to be a provocation that will cause Putin to double down on what he is already doing, then you do not do this

unless you are prepared to take the fatal next step, which is to introduce NATO or other Western forces to protect the Ukrainians, because they are going to be at the business end of a very severe Russian counter response.

So my view is we should aid them, but if we aid them, we should do it with full malice aforethought. We need to know what we are getting into, and we need to be prepared to pay the price of what will be required to actually stop them.

Senator Sessions: Thank you.

Dr. Krepinevich, I think you also wanted to comment on a previous point.

Mr. Krepinevich: I think a key issue with respect to Ukraine is just -- and I think Ashley was kind of alluding to this -- how serious are the Ukrainians?

If they are serious as a heart attack, we have seen recently what even modest amounts of decent military equipment can do to an invading force attempting to occupy another country, whether Iraq or Afghanistan or the Israelis moving into Lebanon in 2006 in the Second Lebanon War. So if they are serious, we have the kinds of equipment that can be very useful for resistance forces, that can buy us a lot of time to get our house in better order and among our Eastern European NATO allies, that can impose dramatically disproportionate costs on the Russians.

So, again, it depends in my mind on just how serious the Ukrainians are. But we can equip them. We do not have to -- you know, we can train them outside of Ukraine. There are a number of things we can do and, quite frankly, we have done it before with some success. But I do think, as Ashley said, it requires some serious thinking up front.

As far as the issue of whether new or different kinds of nuclear weapons would help us in the competition with the Russians, I guess my feeling is, bottom line, do you want to buy yourself some more options or don't you? And you know, can you make the case -- as George was pointing out, you create a bit of dilemma. Can you make the case to your allies that by buying more options, that increases the odds we will not have to use these weapons? Or that we will be put in a position, as Matt was saying, of either go places you do not want to go or surrender, to paraphrase Henry Kissinger.

And the other point I would make is there have been a lot of advances in both the social and the cognitive sciences over the last 20-25 years. Two individuals, Kahneman and another, won a Nobel Prize in 2002 for pointing out the fact that there is no such thing as "rational economic man," that human beings are in many ways irrational.

There has also been done -- accomplished recently in

the social sciences -- some work looking across cultures at how people from different cultures calculate cost, benefit, and risk. And obviously, each person within a culture is an individual, but by and large how different cultures tend to view things. And in some respects, they can be very different from the way we view things.

And so the notion that somehow strategies of deterrence and signaling and so on are going to prove effective over time, certainly Chamberlain thought he was signaling Hitler, I am sure, and thought he had the measure of him. Franklin Roosevelt thought he understood Stalin. We still do not understand why Saddam did the things he did. We think some of them are wholly irrational, I would think.

And so to sit here and say that somehow Putin thinks like us, and of course, he would never do these things. History is replete with despots and dictators doing things we never thought they would do. And yes, Khrushchev was removed by his Soviet colleagues in 1964. Unfortunately, 2 years earlier, he precipitated the Cuban Missile Crisis that almost blew the world up.

Senator Sessions: Well, thank you.

And now, I will go to you next. You can have my time next.

I would just think that that is wise advice. We had a

hundred years ago a shooting of an archduke, and we ended up with the most incredible war that anybody had ever imagined at the time.

On the arming in Ukraine, it is interesting. Brzezinski, Albright, Flournoy have all testified in recent weeks before our committee that we should -- Democrats. And Secretary Kissinger is cautious. And the Germans, Dr. Perkovich, share your view entirely because I was at their embassy not long ago, and they were asked and the ambassador explained their position. So it is a complex world we are in.

Senator King, do you want to --

Senator King: Well, Dr. Krepinevich, I would like to follow up on your comment.

I think often the fault of American foreign policy is thinking that other people think like us and not understanding what cultural and historic differences, and that is why I am so cautious about Putin. There is, I don't know, 500, 600 years of Russian paranoia going back to Peter the Great about the West. Putin's approval rating in Russia today is 80 percent.

I would venture to say if we came into the Ukraine in a visible way, it would go to 90 percent because it is a nationalistic thing that is just part of our history. And I share the chairman's concern about mistakes and

accidents.

We heard in our caucus lunch yesterday about Pleiku, a little town in Vietnam, where there was an attack in 1965. Six Americans were killed. And as a result of that attack, President Johnson believed that this was directed from North Vietnam, and it justified the bombing campaign and then the introduction of American troops.

It turned out 40 years later, it was a randomly generated local conflict. The whole premise of the escalation was incorrect. And that is what really concerns me about the Ukraine, particularly when you are dealing with a place where they have the upper hand in terms of the assets available and readiness -- readily available.

I think I want to, though, just come to some consensus. Is it fair to say that all of you agree that we must modernize our nuclear capacity, and secondly, we must look to greater flexibility in terms of the nuclear deterrent? Is that a fair summary?

Mr. Perkovich: Modernization, yes. Flexibility, would depend profoundly on how -- and these other effects that I am talking about, because -- but modernization, yes.

Senator King: Dr. Kroenig, that is certainly your position, is it not?

Mr. Kroenig: Yes. Modernization and flexibility.

Senator King: Thank you.

Mr. Krepinevich: Yes.

Senator King: Thank you.

Thank you, Mr. Chair.

Senator Sessions: Thank you.

Well, just to proceed a little further, Dr. Kroenig and Dr. Tellis.

Dr. Tellis hypothesized -- raises the hypothetical that there is an attack on Japan, and we are obligated to respond forcefully on North Korea. If we have a less devastating, more technical weapon, we can honor our requirements, maybe do the necessary job without doing as much destruction as a strategic nuclear weapon might do.

Dr. Kroenig came up with another one I had not thought about, which is what if the Russians use a tactical nuclear weapon in the Ukraine, and do we have a tactical nuclear weapon response, short of a massive strategic response?

I had not thought of either one of those examples before, but I think it is something for us to think about.

As I understand where we are today, the administration favors modernization, but it takes Dr. Perkovich's view that specialization or new weapons, even if they are less dangerous and safer and all that, represent some sort of alteration of our strategy that would cause dominoes around the world to be moved. But I am not sure I agree with that, but that is where we are.

And so the budget that has come over, and we have not energized any plan to challenge the President or push him harder, but maybe we should in the months to come and really insist that we discuss this, and is it smarter to have more options or not have more options? So that is --

Dr. Tellis?

Dr. Tellis: I would just like to respond to that because I accept the basic argument that Senator Donnelly is making, that the U.S. arsenal certainly has weapons of varying yield, including low yields.

What I do not have an answer to, at unclassified levels certainly that I can think of, is whether these weapons meet the tests of responsiveness and penetrability. And I think that is really what you need to think about in a different forum. And if you conclude that the low-yield weapons or the weapons that have selectable yields meet the requirements of responsiveness and penetrability, then I think we are home free, and we do not have to worry about this.

But in general, I think the point that Dr. Krepinevich made is really the central point, which is, do you want to be in a position where you have more options rather than less, particularly as you enter a nuclear world where most of the emerging nuclear powers are going to have weapons that are relatively small in yield and, you know, in small

numbers?

And so as you think of this new world that is emerging out there, the questions that Dr. Kroenig is asking is whether the legacy force can actually deal with these contingencies without modification. Now I do not know whether this requires us to actually go back and develop new warheads or whether we can simply tinker with what we have in the back rooms. But these are questions that I think need to be addressed in classified settings with folks in STRATCOM.

Senator Donnelly: Yes, there are a lot of classified settings to address these in. I guess, you know, we talk about people, in effect, almost riding by each other without understanding that they just stopped on the same street.

I would think, and maybe it is for publication, if President Putin would ever think that he could use a low-yield nuclear weapon on another country without catastrophic events then beginning from that, I think he would be sadly mistaken, that every other leader in our network of friends would take action.

And I think -- I would hope, you know, as you talk about this, it is a different culture. It is a different way of thinking. It is in many ways sometimes ships passing in the night, but one ship needs to tell the other

ship, "If you do this, all bets are off."

Dr. Perkovich?

Mr. Perkovich: Just to reinforce -- and I agree with Ashley, you would want to do these studies. You would also want to ask all the different commands, like, given $10 billion for this or for that, how would you spend the money?

But beyond that, in my travels -- and I have been to all the countries that we are talking about -- Iran, not North Korea, but all of the targets. I do not think their leaders are going to discriminate between whether it was 100 kilotons or 12 kilotons, and so on. And I do not think if a device goes off, you know, over at the Pentagon and we are sitting here, somebody is going to say, "Don't worry, it was only 30 kilotons, you know, it wasn't a big one."

So I think it is a game theoretic calculation in a lot of ways, and that this is something the Chinese and others understood all along. They have got their 250 weapons, we have got our 2,200 -- that you do not need to have -- that they are political weapons, and the distinctions about yields and all of that are something that people like us get paid to think about, but political decision-makers in an actual event when they are going off probably are not going to be making those distinctions in the way that they then react. And so I would factor that into the

discussion, too.

Senator Sessions: Now, Dr. Krepinevich, what about the triad? Some think we could get by without the full triad. Maybe the nuclear subs and/or something in addition.

Do you four have an opinion as to that? It is not as expensive as you -- as some people imagine, but it is an expensive proposition.

What are your thoughts about the triad?

Mr. Krepinevich: My thought is that until we identify a range of contingencies, realistic contingencies that reflect the circumstances that myself and my colleagues have been describing here, and test the arsenal against those contingencies or scenarios, I would be loathe to abandon any of the legs of the triad.

I think the bomber leg gives us an enormous amount of flexibility. The submarine leg certainly, perhaps, allows us to sleep most securely at night. And the land-based missile force, to a certain extent, acts as kind of a missile sump because if you look historically at the studies of nuclear attack and so on, that it gives us the ability to absorb a lot of an adversary's nuclear capability if they want to undertake a first strike against us.

So, again, I think we are putting the cart before the

horse if we are talking about abandoning a particular leg of the triad without looking at the new circumstances in which we find ourselves, and how we would deal with those circumstances across a range of plausible contingencies.

Senator Sessions: Thank you, and I will go to you, but do any of the other three want to share briefly?

Senator Donnelly: I apologize. I have to go to another meeting right now.

But I want to thank all of you. We are in your debt for your service, for your efforts to inform us in the best possible decisions we can make. And I want to thank you so much for taking the time to be here.

Thank you.

Senator Sessions: Dr. Kroenig?

Mr. Kroenig: Yes, on the triad, I would agree that each leg of the triad has special attributes and characteristics and that our nuclear force would be weaker if we got rid of any of the legs. I do think we need all three.

You mentioned the cost issue as well, and I think according to most estimates, we spend something like 4 percent of the defense budget on the strategic forces. And given, as Dr. Tellis said, that it is really the backstop of the rest of our defensive capabilities, I think that is well worth it.

And even Secretary of Defense Carter has been on the record to say that I think the quote is, "Nuclear weapons don't actually cost that much." So I think these arguments that they are too expensive miss the mark.

Senator Sessions: He shared that with me recently, and I share that view.

Are there any of you like to comment on that?

Mr. Perkovich: My only thing would be, I agree with you, one would study it. It would be progress if we could make it, and you could help make it, not a holy trinity. In other words, that it is -- the triad is something that should be scrutinized, analyzed, and you come up with strong justification, you keep doing it. But for a long time it has been something you could not question, and I think that would be progress to say we ought to analyze it and not prejudge one way or the other. That would be progress.

Mr. Krepinevich: I just would like to say, Mr. Chairman, my colleague Todd Harrison and Evan Montgomery are working on a cost estimate of the nuclear enterprise, and we are looking to release that estimate in April.

Senator Sessions: Well, that was going to be my final question to ask all of you, knowing what you know about the budget, the President's budget is public, to give us any thoughts about what the priorities should be and if it is

sufficient.

Dr. Tellis, do you want to --

Mr. Tellis: Senator, I cannot speak to the issues of cost. So I will defer to Dr. Krepinevich on that.

But I wanted to just make the point that when one looks at the nuclear trend lines 10-20 years out, there is nothing that compels me to conclude that you can move away from the triad anytime soon. And so I hope that is something that we will continue to invest in.

Senator Sessions: Thank you.

I am, frankly, of the view that there is uncertainty about the United States' will around the world. I do not think it is correct, but there is a growing uncertainty out there. And I think that any significant reduction in our nuclear capabilities could be misread at this point in history in a way it might not be misread previously, like Nixon going to China kind of insight.

And I also have been -- Dr. Krepinevich, I have been watching the defense budget, trying to be hard on them, but likewise, I am a little bit of the view that things are getting dicey around the world. People think we are on a pell-mell collapse of will, and even the defense budget, if it is cut -- if it is perceived as being reduced too significantly could be improperly perceived as weakness.

Because I think we can maintain a lean-type budget.

With this fabulous military, this battle-hardened, fully equipped military that we have, and highly trained, I do not think we are heading pell-mell to weakness. But I am worried we got people in the United States that think so, and we got people around the world that share that concern.

Thank you for this fascinating and fabulous comments you shared with us. Again, if you have any thoughts that you would like to share, I would appreciate receiving them.

I would also say that we have a good subcommittee and a good committee that I do think wants to do the right thing, and politics has not been a big factor in recent years on nuclear issues, and I hope we can keep it that way.

Thank you.

[Whereupon, at 4:25 p.m., the hearing was adjourned.]