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INTERVIEWER: Is nuclear war no longer taboo? For the past 70 years, the nations of the world have more or less agreed that the role of nuclear weapons is actually to discourage aggression. Owning them is one thing, but using them is a no-no. Now two volatile world leaders with considerable nuclear arsenals at their fingertips are engaging in disturbingly bellicose rhetoric. Are we at the brink of nuclear war?

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Nina Tannenwald, a faculty fellow at the Watson Institute and an expert on global security and efforts to control weapons of mass destruction, tells us how nervous we should be as we read the threatening tweets exchanged by President Trump and supreme leader Kim Jong-un.

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So Nina, can you first define, what is nuclear taboo, the post-World War II nuclear taboo? And is it still in effect? Is it still working?

NINA So the nuclear taboo is a widespread inhibition on using nuclear weapons first. It's associated with a sense of moral opprobrium about using such destructive weapons and killing so many people. And this has developed over the course of the postwar period. And most people now think that nuclear weapons really aren't to be used. Since the 1950s, most American presidents have shared this view. And despite all the talk from Trump and Kim Jong-un, North Korean leader, it is still in effect.

But it's under pressure today from a number of areas. One is all this loose talk about using nuclear weapons, which helps to erode or undermine the taboo. Second is the nuclear doctrines of the nuclear armed states are expanding or increasing the roles that nuclear weapons have in security policy. And this is a reverse of trends since the end of the Cold War.

Other things that are putting pressure on the taboo-- so nuclear doctrines, modernization plans-- so almost all the nuclear armed states are in the process of modernizing their nuclear arsenals. United States, for example, is seeking to develop new small nuclear warheads,

tactical nuclear weapons, in part because they're more usable. But of course, a weapon that is more usable also puts pressure on this nuclear taboo, this dividing line between conventional and nuclear weapons. Former Secretary of State George Schultz just testified before Congress.

One thing he said is, there is no use for a new small tactical nuclear weapon. We shouldn't go down that road. Once you use one nuclear weapon, you use more nuclear weapons, and then you're in a nuclear world. This kind of technology puts pressure on the taboo. So we now have this 73-year tradition of non-use of nuclear weapons. And the nuclear taboo helps to reinforce that tradition and maintain it.

INTERVIEWER: And you said other states have modernization plans as well?

NINAAll the nuclear armed states have modernization plans. They're all going in the wrongTANNENWALD:direction.

INTERVIEWER: Are the claims that Kim Jong-un makes about his country's nuclear capabilities credible?

NINA Yes. I think they're quite credible. Kim Jong-un has been quite exemplary in announcing in
 TANNENWALD: advance what North Korea's intentions are, to build a nuclear arsenal, then testing the weapons for all to see. And also announcing that they would build ballistic missiles, and then regularly testing those missiles for all to see.

Now, there's some fudging. So the giant nuclear test that took place in September 2017 he claimed was a hydrogen bomb. That's a thermonuclear weapon. That's a very sophisticated capability. Probably, it was a boosted fission weapon. But actually, it doesn't really matter. That weapon had 10 times the explosive power of any fission weapon that he had tested earlier.

People estimate a small nuclear arsenal, with perhaps the capability to add three weapons a year. He has intercontinental ballistic missile capability to strike the United States. And so I think no one should be in doubt that the capabilities are there.

INTERVIEWER: Do you think that President Trump would put Seattle at risk to protect or defend Seoul?

NINA If North Korea attacked Seoul, we have an alliance agreement with South Korea. And so the
 TANNENWALD: most likely way that we would respond is with conventional weapons. The problem, then, is that North Korea would respond with a nuclear weapon because it's going to be overwhelmed by a US conventional force.

Would Trump do that? That's highly risky. And I think there would be a lot of hesitation before doing that. But it is possible.

INTERVIEWER: How do you see that unfolding?

NINA I actually think the most likely way we would get into a nuclear war with North Korea is through
 TANNENWALD: miscalculation or accident. So I think there's a lot of incentive for both countries to be very cautious about intentionally launching a war that could escalate to a nuclear exchange. North Korea could be wiped out, and the United States would have catastrophic damage.

The intentional launching of a war is less likely than launching a war through miscalculation, which, how could that happen? Take this recent example of the false alarm in Hawaii of a nuclear strike. The emergency alert system in Hawaii sent out a message saying that ballistic missile was coming in, and they had 37 minutes or something like that. That turned out to be false, fortunately.

But suppose that North Korea had gotten word of that message. They could have interpreted it as the United States preparing to launch. Or suppose, at the same time that that false alarm had been sent out, that a US bomber was on a training run around South Korea. And so North Korea mistook that bomber as a plane launching a nuclear attack. And then North Korea, because it has a very small arsenal, has a very strong incentive to launch first.

This is what's called first strike instability in the jargon of the nuclear weapon ears. When you have a very small arsenal, if you sit there and wait, the United States could potentially knock out all of-- let's say they have 12 missile sites or something like that. So North Korea has an incentive to launch first. And they have a very strong incentive to launch first. And once they launched, then we would likely retaliate.

INTERVIEWER: So Nina, if you were in charge, what would you try to do? How would you go about trying to de-escalate the risk of nuclear war between the United States and North Korea?

NINA The main thing we have to do is talk to North Korea. And I think we have to drop the

TANNENWALD: precondition that North Korea has to come to the table already committing to denuclearize.

INTERVIEWER: You don't think they'll do that.

NINA I think there is zero chance at this point that North Korea is going to get rid of its nuclear

TANNENWALD: weapons. When North Korean leaders saw what the United States did in Iraq in 2003, engaging in regime change in Iraq and overthrowing Saddam Hussein, and then again in Libya in 2011, in overthrowing Gaddafi in Libya, the lesson North Korean leaders learned was that you better have nuclear weapons to prevent the United States from coming in and engaging in regime change. So that's why they want them. That's the main reason.

> They may also want them for offensive reasons, which is to try to divide South Korea from the United States. If they can threaten South Korea and then raise doubts about whether the United States would actually respond to defend South Korea, that would create a divide between South Korea and the United States. The quicker we move on from the fiction that we are ever going to get them to get rid of their nukes, the more likely we are to de-escalate this crisis.

We are going to have to make some kind of commitment that we're not going to engage in regime change. North Korea has long wanted a non-aggression pact with the United States. And so something along those lines. Those are starting places for a policy that de-escalates this military crisis. But those policy positions are also a very long way from where the current administration is.

- **INTERVIEWER:** But do you think another administration could get there, if it's not Rex Tillerson and not Donald Trump?
- **NINA** Yes, absolutely. Yes. I think there are many people in Washington advocating talking with
- **TANNENWALD:** North Korea and arguing that we're in a world of deterrence now. We're not really in a world of nonproliferation anymore.
- **INTERVIEWER:** And you think the interlocutors on the North Korean side will listen to that kind of discourse, that reasonable shared ethics? Come on, guys. We don't do this anymore.
- NINA I think from the North Korean perspective, it's not really about ethics. It's about the survival of
 TANNENWALD: the Kim Jong-un regime. And so if there were an agreement that the United States is not going to engage in regime change in exchange for some significant constraints on the arsenal and on the ballistic missiles, I think there would be some room for agreement there.
- **INTERVIEWER:** Is it worth looking at the Iran nuclear deal and comparing it with what's going on in North Korea, at least President Trump's attitude toward the Iran deal?
- NINA Mm-hmm. I think it's very relevant for two reasons. One, the Iran agreement is an example of

TANNENWALD: a very successful arms control agreement that involved compromise on both sides. So that shows that such an agreement is possible. This was a six-party agreement.

If we abandon the Iran agreement, then that sends a signal to North Korea that if the United States doesn't stick to its promises with Iran, why should North Korea bother to engage in any agreement with the United States? There are many reasons for the United States not to walk away from the Iran agreement. But sticking to it does help reinforce that these kinds of agreements are possible. They do increase the security of everybody.

INTERVIEWER: Well, the doomsday clock has been set at two minutes to midnight. Where would you set the clock?

NINA Well, that's a good question. Two minutes to midnight is the same as it was in 1953 at theTANNENWALD: height of the Cold War. So one question this raises is whether the nuclear threat, the danger of nuclear war, is the same as it was in 1953.

INTERVIEWER: And that's when the US and the Soviet Union were testing thermonuclear weapons?

NINA Yes. There was a real risk of a nuclear war that would lead to global annihilation. So is the current situation like that, we could ask. I think my answer would be no. No and yes. So in one regard, if the issue is whether a nuclear exchange now would lead to global nuclear annihilation, I think probably not, that you could have a use of nuclear weapons today that would not wipe out the whole world.

On the other hand, if you view this clock as signaling the possibility of major catastrophe, then yes. We could have a major catastrophe now through use of nuclear weapons. A small use could escalate to a large use. So for example, in the 1961 Berlin crisis and during the 1963 Cuban Missile Crisis, the clock was set at seven minutes to midnight. In my view, the Cuban Missile Crisis is the closest we ever came to nuclear war, which is incredibly dangerous. So the metrics for setting the clock have shifted today.

The staff of the bulletin also includes the consequences of climate change. And that is a global-- that does have global effect. So what's going into the clock now is a little bit different than in the old days I would set it very close. I think that the risk of a nuclear exchange now is higher than it's been in my professional lifetime. I have never been so worried about the possibility that we could actually get into a nuclear war, mainly through miscalculation.

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