

Five Myths About Nuclear Weapons

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Introduction

JOANNE MYERS: Good afternoon. I'm Joanne Myers, and on behalf of the Carnegie Council, I would like to welcome you all to this Public Affairs Program.

The topic for our discussion is nuclear weapons and the way we think about their use. Ward Wilson is our speaker. We are very pleased to provide him with the opportunity to share his work on this important topic. You'll find that his book, *Five Myths About Nuclear Weapons*, is an alternative to conventional thinking about this subject.

Almost seven decades into the nuclear age, we still know a lot less about nuclear weapons in foreign policy than we may think. At least that is one of several surprising and compelling arguments you will find in reading his book. For most of us, nuclear weapons remain out of sight and out of mind. Even so, many experts believe that nuclear weapons are the greatest challenge we face. Some believe that they are simply too dangerous and that countries should agree to give them up. Others believe that they are essential for our defense. Still others worry that it is simply a matter of time before one is used against the United States.

In *Five Myths About Nuclear Weapons*, our speaker questions commonly held assumptions relating to this topic. For example, one of the categories he writes about is how having nuclear weapons is often treated as that definitive thing that acts as a deterrent, keeping us safe and ensuring our security. But he tells us that this notion is built on myth, misperception, exaggeration, and error, and he writes that a review of the practical record of nuclear weapons as a deterrent shows more obvious failures than obvious successes and is far more problematic than most people assume.

Ward fleshes out this assumption, as well as others, as he examines the facts and measures just how far he believes the positions of proponents of this theory have strayed from reality.

As nuclear issues in places like North Korea, Iran, and Pakistan continue to dominate headlines and seal policymakers in boxes, this timely book brings a welcome new perspective and insight. In provocatively reframing a problem that still awaits a solution, Ward's thesis will open a new dimension to our understanding of nuclear history and statecraft, past and present.

Please join me in welcoming a very thoughtful individual, our speaker today, Ward Wilson. Thank you for coming.

Remarks

WARD WILSON: Thank you. I'm very pleased to be at the Carnegie Council. I especially appreciate all of you coming, because nuclear weapons is a very dreary subject and it's a particularly dreary day.

Essentially, we all feel that nuclear weapons are horrible and immoral and necessary, so we try to think about them as little as possible. But I would like you to try to have an open mind about the things that we have always been told about them.

I had the opportunity to speak to a peace organization in central New Jersey three times over the course of two-and-a-half years. You have to imagine these kind of elderly peaceniks—70-year-olds with ponytails. The first time I spoke, they all said, "That's very sweet. I'm so glad that you want to, but it can't be."

The second time I talked, they said, "Well, you know, that's kind of-

And the third time, they all said, "This is really right."

So these ideas will seem unconventional and unusual, I'm sure. But I ask you to keep an open mind.

Problems seen from one perspective can be radically different seen from another. Consider Singapore. Fortress Singapore was thought to be impregnable. For 100 years it served as the irreducible symbol of British power in Asia. And it was impregnable, viewed from the south. But the Japanese looked it from the north. They attacked it from the north through the supposedly impenetrable jungle, and they conquered it within a few weeks.

Similarly, the arguments that proponents of nuclear weapons make and that they have built up look like an impregnable fortress. Even though the dangers of nuclear weapons are clear and undeniable, realist arguments have always won. The mighty walls of the intellectual fortress guarding nuclear weapons have withstood sustained and sometimes furious attack for 65 years. Realists shake their heads sadly when people talk about nuclear abolition. They know that abolition is impossible, an idealistic dream. They know that people who believe in long-term abolition are foolish; people who believe in abolition are utopian dreamers.

The advocates of nuclear weapons are right—if you look at the world from within their worldview. Abolition is impossible, seen from their perspective. For 67 years, almost everyone—realists, abolitionists, world government advocates, madmen for, against—everyone has seen the nuclear weapons problems from the nuclear proponents' perspective.

But since the end of the Cold War, people have started to slowly step out of the proponents' mindset and reexamine the assumptions and beliefs that undergirded the debate for 65 years. Walk around and look at the problem from a different perspective, reexamine the facts objectively, and everything changes. Suddenly abolition is possible. The problems are not intractable, not insoluble.

No one does his best thinking when he's afraid, and so the ideas that grew out of the Cold War should be suspect. Reexamine the facts and you'll see that the arguments for nuclear weapons aren't powerful; they're preposterous. They are an unpersuasive collection of wishful thinking held together by nothing more than fear and rationalization.

Abolitionists have a much stronger case than proponents, not because nuclear weapons are immoral, although they surely are, not because nuclear weapons are dangerous, although that danger is certain beyond doubt, but because nuclear weapons are not just immoral and dangerous;

they are immoral, dangerous, and clumsy weapons. Nuclear weapons too big, too clumsy, too outmoded, too messy for any conceivable purpose.

"But, Ward, proponents' arguments are really strong. After all, nuclear weapons shocked Japan into surrendering in World War II. Nuclear weapons are the most destructive weapons in history. Nuclear deterrence is essential for our protection. Nuclear weapons have kept us safe for 70 years. Nuclear weapons can't be disinvented."

Okay, those are strong arguments. Let's look at each of them in turn.

Nuclear weapons shocked Japan into surrendering at the end of World War II—except they didn't. Japan surrendered because the Soviet Union entered the war. Japanese leaders said the bomb forced them to surrender because it was less embarrassing to say they had been defeated by a miracle weapon. Americans wanted to believe it, and the myth of nuclear weapons was born.

Look at the facts. The United States bombed 68 cities in the summer of 1945. If you graph the number of people killed in all 68 of those attacks, you imagine that Hiroshima is off the charts, because that's the way it's usually presented. In fact, Hiroshima is second. Tokyo, a conventional attack, is first in the number killed. If you graph the number of square miles destroyed, Hiroshima is sixth. If you graph the percentage of the city destroyed, Hiroshima is 17th.

Clearly, in terms of the end result—I'm not talking about the means, but in terms of the outcome of the attack—Hiroshima was not exceptional. It was not outside the parameters of attacks that had been going on all summer long. Hiroshima was not militarily decisive.

The Soviet Union's declaration of war, on the other hand, fundamentally altered the strategic situation. Adding another great power to the war created insoluble military problems for Japan's leaders. It might be possible to fight against one great power attacking from one direction, but anyone could see that Japan couldn't defend against two great powers attacking from two different directions at once.

The Soviet declaration of war was decisive; Hiroshima was not.

After Hiroshima, soldiers were still dug in in the beaches. They were still ready to fight. They wanted to fight. There was one fewer city behind them, but they had been losing cities all summer long, at the rate of one every other day, on average. Hiroshima was not a decisive military event. The Soviet entry into the war was.

And they said this. Japan's leaders identified the Soviet Union as the strategically decisive factor. In a meeting of the Supreme Council in June to discuss the war in general, policy, they said Soviet entry would determine the fate of the empire. Kawabe Toroshiro said, "The absolute maintenance of peace in our relations with the Soviet Union is one of the fundamental conditions for continuing the war."

Japan's leaders said Hiroshima forced them to surrender because it made a terrific explanation for losing the war. But the facts show that Hiroshima did not force Japan to surrender.

If nuclear weapons are a religion, Hiroshima is the first miracle. What do we make of a religion when its miracles turn out to be false? Nuclear weapons shocked Japan into surrendering in World War II—except they didn't.

Two: Nuclear weapons are the most destructive weapons in history. But destruction doesn't win wars. What nuclear weapons do best is kill civilians in large numbers. But wars are won by killing soldiers. No war has ever been won by destroying a city. No army has ever captured a city, destroyed it, and then the other side surrendered—ever. No war has ever been won by killing civilians. No leader has ever said, "We have to surrender now because too many civilians are dying."

Nuclear weapons are the most destructive weapons ever, but vast, general destruction, killing civilians and destroying cities, doesn't win wars. What nuclear weapons do best matters least in war. As long as armies are still armed and willing to fight, the war goes on. Nuclear weapons are the most destructive weapons ever, but destruction does not win wars.

Three: Nuclear deterrence is essential for our protection. But nuclear deterrence only protects us if it's perfect, and nuclear deterrence has been far from perfect. Proponents of nuclear weapons look at the Cold War and they look at these crises and they say, "Nuclear deterrence has worked every time."

I sneaked the Gulf War in here [pointing to slide]. It's not really in the Cold War, but it's a really good example, so we're going to make an exception.

But seeing this as an unblemished record of success is a singular misreading of the evidence. Consider Cuba. I sat in the office of a very distinguished man from Harvard who had served, in government and out, in the Kennedy School. He said to me, "Ward, come on, look at Cuba. It proves that deterrence works. The Soviets put the missiles into Cuba, there was a risk of nuclear war, and they took them out."

I flapped my mouth feebly, and then a month later, it occurred to me what I should have said.

What about Kennedy? Kennedy knew that if he took action in Cuba, either blockading the island or using airstrikes, he risked nuclear war. They talked about it 60 times in the meetings, the secret deliberations they had before they decided what to do. They knew they were risking nuclear war. Yet they went ahead. If nuclear deterrence means that a leader sees a risk of nuclear war and then pulls back, how do we explain Kennedy's decision?

Don't get me wrong. I like Kennedy. I memorized his speeches as a kid. I think he did far better than anyone else would have. I just don't think nuclear deterrence is the be-all and end-all.

Take the 1973 Middle East war. Proponents talk about Henry Kissinger putting U.S. nuclear forces on alert to warn the Soviets not to send troops to Egypt. "See?" they say. "Nuclear deterrence works."

But what about Sadat and Assad? What were they thinking? Everyone knew that Israel had nuclear weapons. It had been reported in *The New York Times*. Any attack on Israel can quickly become an existential one. You break through in the Golan Heights, you can be in Tel Aviv the same day. So what were the leaders of Egypt and Syria thinking? Why didn't Israel's nuclear weapons prevent them from launching a war?

Take the Gulf War. Kevin Chilton, at one time commander of all U.S. nuclear forces, in an article in *Strategic Studies Quarterly*, said that the Gulf War is proof that deterrence works. Secretary of State James Baker threatened Saddam Hussein. In the letter he sends, he says, "If you use chemical or biological weapons, the United States will have recourse to means of great force and"—whatever the euphemism is. I don't remember. And everyone considers that to be successful use of nuclear

deterrence.

But, as we all know, if you look closely at Baker's letter, he actually drew three red lines in the sand: Don't use chemical or biological weapons. Don't set the oil wells on fire. Don't make terroristic attacks against our friends and allies (Israel). Yet, as we all know, Saddam crossed two of those red lines, setting the oil wells on fire and firing Scud missiles into Israel.

In baseball, if you get a hit one-third of the time, you're doing really well. You can make a lot of money batting .333 in professional baseball. But nuclear deterrence is not baseball. Being successful in nuclear deterrence one-third of the time is not nearly good enough. Because the consequences of any failure could be catastrophic, nuclear deterrence has to be perfect or vanishingly close to perfect. Again and again, if you examine the record—and I've only talked about a few of the things here; there are more—you find failures of nuclear deterrence. You find leaders acting in risky and aggressive ways when they were confronted with the risk of nuclear war. Those failures didn't lead to nuclear war, obviously. But that was the result of luck or happenstance, not because nuclear deterrence works like magic.

Nuclear deterrence is essential for our protection. But nuclear deterrence has to be perfect if it's going to protect us. And it has been far from perfect.

Four: Nuclear weapons are necessary because they keep the peace. But the proof that they have kept the peace is nonsense. There has been no war between the United States and Russia for 65 years and no major war in Europe.

Proponents claim this peace is the result of nuclear deterrence. But this is proof by absence. This is what I call "the virgins and the volcano" proof. The volcano erupts and the priest says, "To appease the gods, we have to throw a virgin in." They worry about it for a while and then they do it. They throw the virgin in. There's no eruption for a year, and everyone says, "Aha! It worked!" And they keep throwing virgins in ever year, until the mountain explodes again.

We don't accept proof by absence in any situation where the stakes are high. Take medicine. Imagine that I found a bush in my backyard and I made an extract from the root and I claimed that it prevented mesothelioma, a rare form of cancer, and then gave the extract to 300 people for a year and none of them got mesothelioma. Would any credible medical organization in any country say that I had proved that the extract prevents cancer?

Take airline safety. Imagine that a woman invents a device that she claims prevents metal fatigue in airplanes by sonar—I don't know, something. She has a friend at the Federal Aviation Administration. They put 100 of these devices on planes. They fly for a year, and none of them crash from metal fatigue. If some cheap airline announced that they were going to stop doing maintenance on metal fatigue and stop doing metal fatigue inspections and, instead, rely on these devices, would you fly that airline?

We don't rely on proof by absence in any circumstance where there's real risk involved. Why would we rely on it where the lives of millions of people are at stake? Shouldn't we demand a higher standard of proof in such a serious matter? Nuclear weapons are necessary to keep the peace, but the proof that they have kept the peace is nonsense.

Nuclear weapons can't be disinvented. This is the killer. This is the backbreaker. This argument has won debates for 50 years. Sometimes proponents say, "Well, you can't stuff the nuclear genie back in the bottle."

The power that this argument has comes from the fact that it's absolutely true. You can't disinvent technology. It also happens to be absolutely irrelevant. It's an entirely specious argument. No technology is ever disinvented. Don't get me wrong; technology goes out of existence all the time. Just try to get tech support on any electronic device that's more than three years old. Technology goes out of existence one of two ways, however: (1) Better technology comes along, or (2) people realize it was dumb technology to begin with. Consider the penny-farthing. These bicycles from the 1900s with one big wheel and one little wheel were difficult to get up on and dangerous to fall off of. But no one warned that you can't stuff the penny farthing genie back into the bottle. When better bicycles came along with two wheels the same size, they fell out of existence with no push from us.

Look at this pram from 1938 in the U.K [points to slide]. I don't know if you can see this, but Mom is wearing a gas mask and Junior is inside of a hermetically sealed carriage, with little glass windows so he can look up and see the sky. He's got this chimney thing with, I presume, a gasmask canister in it. This technology did not have to be disinvented. It was dumb technology. No one wanted to take Junior for a walk in the middle of a chemical weapons attack. It fell out of use on its own.

Finally, my favorite, the Hiller VZ-1—marvelous technology, invented by the military in 1953 [points to slide]. There's a helicopter blade underneath the platform. A single soldier can be lifted as much as 15 or 20 feet up in the air. It's an amazing thing. Of course, some people called it the "Here I am. I'm defenseless, exposed, and entirely vulnerable" death platform, which may account for the fact that only six were ever made. It's a cool gizmo, but it was bad technology, and it fell out of use on its own.

The question is not whether or not nuclear weapons can or cannot be disinvented. That's a specious argument. The question is whether or not nuclear weapons are useful military technology. On the face of it, that seems unlikely since no one has found a situation in which they really wanted to use nuclear weapons in the last 68 years.

The genie argument is no more than a cheap debater's trick, but it is psychologically suggestive. It reveals something about proponents' thinking. In the minds of proponents, nuclear weapons are the genie. They are magic. Wave your nuclear around and people will do whatever you say. If nuclear weapons are magic, then abolition is impossible. Everyone wants magic. No one would ever give it up. But if nuclear weapons are clumsy, blundering, overly large, expensive, outmoded dinosaurs, then abolition takes on a different cast.

Nuclear weapons can't be disinvented, but no technology is ever disinvented.

We have been told for so long that nuclear weapons are awesome, that they give us magic power, that the reality has gotten lost. The reality is that nuclear weapons are not very good weapons. The first problem is that they are messy. You drop a bomb on the enemy's troops and the radiation can blow back on your own troops.

This is the famous study by Sidney Drell and Frank von Hippel, physicists, in 1976. They did a study of a limited nuclear attack on the United States. You can see from the radiation trails that even an attack where you try to use nuclear weapons surgically, the radiation spreads all across the country. They calculated that 20 million people would die.

Nuclear weapons have enormous limitations.

The second problem with nuclear weapons is that they are so big. Proponents believe, in a rather simpleminded way, that the bigger a weapon is, the better it is; bigger is always better. It seems to me that that's probably not so, that probably the relationship between utility and size is a bell curve,

and that at the top it's probably something that is the size of a building. Almost all targets in war are man-made. I'm making this up, but I would guess that 95 percent of all targets in war are building-size or smaller. If you use a nuclear weapon to destroy a building in a city, you have to blow up three-quarters of the city just to destroy the building. Why would you want to do that? Nuclear weapons have crippling limitations.

One way to think about this idea of a weapon that's dangerous but too big to use is to think about the bank guard. Imagine that we're the trustees of a bank and there have been some robberies, so we're going to hire a bank guard. I say, "Let's give him a weapon," because he's a big, burly guy, but he needs a weapon. We talk about it, and somebody says a knife, and somebody says a baton, like the British, and somebody says a gun. Then someone says, "Oh, no. I know. Let's give him dynamite. It's the most powerful weapon available," and everyone says, "Oh, yeah, the biggest weapon possible. Great. Give him dynamite."

So now here we are. We're in the bank lobby. The guy has three sticks of dynamite tucked in his belt and a lighter. A bad guy comes up to the window and he says, "Give me the dough," or whatever they say. What's the bank guard going to do? Is he going to take the stick of dynamite and light it and throw it and blow up the bad guy and blow up the teller and blow up the customers and blow up the bank lobby?

There are weapons that are too big to be useful. And it shouldn't surprise us that nuclear weapons have not been used for 70 years. The whole trend in warfare is away from bigger weapons. The trend is towards smaller, more intelligent, more precise weapons. Precision-guided munitions are the future in warfare, not big, blundering weapons from the past.

There's no question that nuclear weapons are very dangerous. It's just not clear that they are very useful. The question is, why would you want to keep technology that's very dangerous but not very useful?

Reimagining nuclear weapons as clumsy rather than powerful is a radical departure. But what if the traditional story we have been told is flawed? What if the Japanese misled us at the end of World War II? What if the United States leapt to the conclusion that nuclear weapons were a miracle weapon and then somehow persuaded everyone else to go along with them, then the Cold War came and froze those ideas in place for 40 years and inflated them with fear? What if our ideas about nuclear weapons are informed by mistakes and misjudgments and exaggerations and myths?

The most important task, as I see it, is to rethink nuclear weapons. We have to reexamine all the Cold War ideas carefully. Proponents think nuclear weapons are enormously powerful. They believe in them fervently—perhaps a little too fervently. But we need to step out of the proponents' worldview to look objectively, to see with fresh eyes.

Rethinking these weapons is not an academic exercise. I am a historian by training and a pragmatist by inclination. In my view, the real danger—the very real danger—that looms in the background is the danger of nuclear war. War can come out of the blue. Remember, in 1914, people in Europe did not expect war. It took them entirely by surprise. From my perspective, the danger of human folly is always present, even when we feel entirely safe. It may be that we're on the cusp of a much more volatile and dangerous world, one with flood and drought and famine. There is, therefore, an urgency around nuclear weapons issues.

But there also is, surprisingly, a real sense of hope for a sensible outcome. The ideas that proponents use to protect nuclear weapons are not an impregnable fortress. Proponents are

enthralled by nuclear weapons. They want us to share their view. We must disenthrall ourselves.

Thank you.

Questions

QUESTION: Thomas Cassilly.

You mentioned that the Soviet intervention was the cause of the end of the war. Stalin could have intervened at any time after the Germans surrendered. The troops were ready on the border to intervene. Why did he intervene at that point? Because the bomb had been dropped the day before. He wanted to get there. He had been promised Japanese territory. The reason, you say, was Soviet intervention, but you don't say why the Soviets intervened at precisely that moment.

WARD WILSON: My understanding is that Truman and Churchill and Stalin agreed, I think at Tehran in 1943, that the Soviets would come into the war approximately three months after the end of the war in Europe. Partly that was to refit and retrain those troops and move them across to the Pacific theater.

It is true that Stalin moved up the time of the Soviet invasion by 48 hours, after he heard about Hiroshima. A lot of people see that as evidence that nuclear weapons are, in fact, powerful, that they do deter our enemies and so on. I think that I don't want to take my views on nuclear weapons from Stalin. He may have been impressed, but he may also have been wrong.

QUESTION: Don Simmons.

Many of us, I'm sure, here would be in favor of outlawing or getting rid of nuclear weapons if we could all be sure that they were all gone. The concern is that the other guy, whether it's North Korea or Russia, has a few and you've gotten rid of yours. Could you just comment on how you deal with that argument?

WARD WILSON: This is where you have to just deal with the gruesomeness of all this. A few nuclear weapons are not going to win a war for you.

We imagine that a madman with a handful of nuclear weapons could conquer the world. The reality, I think, is considerably different. Japan had 68 cities at least 50 percent destroyed, some of them more. Toyama was 99.5 percent destroyed. They didn't surrender. Great Britain didn't surrender when Coventry was flattened. The Germans didn't surrender when Hamburg was bombed or Dresden was destroyed.

Think about this. In 1939, the British believed that the first thing the Germans would do in a war would be to launch chemical weapons attacks against their cities. There's a reason for the funny thing with the pram and the woman. Everyone in Great Britain had gas masks. The British government took very seriously the possibility that they would use chemical weapons in the attacks against cities. Chemical weapons are not nuclear weapons. They are weapons of mass destruction.

The British saw the threat of Adolf Hitler, they evaluated what they thought his character was, and they said, "This man has to be stopped. The cost may be high. We have to pay it."

That's a decision that governments have made throughout history. I can imagine a war between the United States and a country armed with 10 nuclear weapons in which major cities are evacuated,

military forces are sent rapidly around the world, deployed, and war commences. We have not fought in a war in which the stakes were like World War II in some time, and so we forget that often dramatic sacrifices are called for by nations.

Freeman Dyson makes an interesting argument about the few nuclear weapons argument. He says the problem with that is that you may have a few tucked away, but you never know, when you come out with your six nuclear weapons that you had hidden, that maybe China was hiding 15, and so on. He actually thinks—and I try to work this through sometimes; I'm not sure I completely agree—he thinks that uncertainty is a certain benefit in a world free of nuclear weapons.

QUESTION: Jim Robbins.

You made a point which I think relies on the fact that so far all nuclear weapons have been in the hands of rational governments. Should we not be concerned that they might fall into the hands of terrorists who don't care about whether they are immoral or clumsy or anything else?

WARD WILSON: There are two answers to that. If you want nuclear weapons to fall into the hands of terrorists, then what we should do is continue on exactly as we are doing today—general, slow proliferation, more and more nations slowly building arsenals of nuclear weapons, and nuclear technology spreading around the globe. Eventually you'll get a terrorist with his or her hands on a nuclear weapon.

I think that if you're really concerned about nuclear terrorism, imagining that we can kind of keep the world locked where it is, is not persuasive to me.

QUESTION: Sheryl Rubinstein.

You mentioned as an example, what if you said, "I have a cure for mesothelioma"? Mesothelioma is caused by, as you know, asbestos. But wouldn't you have to have exposed those 20 or 30 people to asbestos before you could say that you cured them?

WARD WILSON: That gets me into trouble right away. I should never have said something specific. I take your point.

But proof by absence is not reliable. Because my example is bad doesn't mean that the general point about proof by absence is invalidated. Proof by absence is a problem.

QUESTION: David Musher. I have two questions.

One has to do with Iran, which has a messianic, apocalyptic view and has declared openly that it would like to destroy Israel. How do you deal with a situation like that?

My second question has to do with your statement about pinpoint bombing, the size of a building being a military target, which has been in existence for the past several decades. But certainly you are an historian and you realize that in history landmass wars were common. In fact, if you're using the analogy of Russia coming into the war, that would have been a landmass war, because they had millions of soldiers who would have come in. Certainly, nuclear weapons could easily have been used in World War II if they had had them earlier, and certainly more so in World War I. General MacArthur did want to use them when the Chinese invaded Korea. How do you deal with that aspect of it also?

WARD WILSON: The problem with nuclear weapons is that they're just not that good. What's

interesting is to look at the Eisenhower administration. Eisenhower came into office and said, "I really want to consider using nuclear weapons in Korea. I don't want to get a taboo in place against using nuclear weapons and then people think that you can never use them."

Apparently—and I'm waiting for the studies to become declassified—they did studies of using the weapons in Korea. Korea is a country that is crisscrossed by steep, narrow valleys. You can drop a nuclear weapon in this valley and destroy this regiment and the one in the next valley over is fine. They eventually decided that the only really good way to have a really dramatic use was against airfields, because airfields are big and open and flat.

But it's striking that Ike went looking for a tactical situation where he could use nuclear weapons, and eventually they decided that they didn't want to use them, because if they used them in Korea and they weren't decisive, then it might well undermine the deterrent value of nuclear weapons.

It's possible to use nuclear weapons against massed formations. But all of the problems that come with lots of radiation come too.

Military guys hate nuclear weapons. I had lunch with a guy who's a four-star general. They're messy. They mess up the battlefield. All the guys have to wear big suits. They can't breathe. They can't see. They can't fight.

There's no question that they make big explosions and they create a lot of destruction. I think that we need to examine more closely the idea that that's really useful in war.

It turns out that tanks are, not invulnerable, but quite well designed to be unaffected by nuclear weapons. There's a lot of metal shielding to protect you from radiation. They're low. They're heavy. Unless they are in the direct blast zone, they survive.

A fellow recently did a study of the Pakistani army using nuclear weapons and found that if India came in, the Pakistanis would have to use their entire nuclear arsenal just to stop the tank forces, and they would have nothing left over. And if the wind's blowing the wrong way, then you get radiation all across.

On the rationality thing, Ahmadinejad just strikes me—remember that kid who was always doing outrageous things to get attention?—he strikes me as the kind of politician who has learned how to master that technique of saying the outrageous, getting people to get all worked up about it.

I could be wrong. I think the problem with the rationality argument is that it presumes that we're rational and we always will be, and that they are irrational. There has never been a regime that has committed suicide. It's perfectly possible to do, even without nuclear weapons. In fact, if the Iranians were crazy and they wanted to commit national suicide, they could do it today. All they have to do is launch a chemical weapons attack against Israel, and the whole world gets up in arms, the United States attacks Iran, and the regime gets thrown out. Why go through all the trouble and effort of building nuclear weapons?

It strikes me that Iran is not Hitler. Iran is France. We laugh and joke in the disarmament community because the last country to give up nuclear weapons won't be Pakistan, won't be Israel; it will be France. Nuclear weapons are bound into French identity. France is France because it has nuclear weapons. Without nuclear weapons, they are a middle-size power with really great cuisine. So they don't want to give up their nuclear weapons.

I worry about irrationality, but I worry less about a rogue state leader who is irrational and more about an American leader who is irrational, a Soviet leader who's irrational—Richard Nixon in a drunken rage at the end of his presidency or Ronald Reagan's Alzheimer's coming on sooner than it actually did or people getting angry and doing stupid things, which happens all the time in history. You read *The March of Folly* by Barbara Tuchman and you know that otherwise seemingly rational leaders have taken very irrational choices.

In fact, I think that the next phase in the discussion about nuclear weapons is going to be in neuroscience. There has been a lot of study on risk and how human beings respond to making decisions in crisis. There is an intersection with nuclear deterrence, in which supposedly everyone is rational and they are calculating the costs and benefits and it's not about revenge or anger or lust for war or any other thing.

I take the irrational leader problem seriously. I take it seriously enough to apply it to all the nuclear powers. It's more obvious when Ahmadinejad does his "I'm going to say provocative things" routine.

QUESTION: Bob Perlman.

A quick question for you using your views of nuclear weapons for conventional killing. What about rogue nations like North Korea, and assuming that Iran is rational, using them as bargaining chips?

I guess the corollary to that is that I assume, then, you favor intervention in Iran and potentially North Korea to prevent or disarm them from nuclear weapons status.

WARD WILSON: I think that what happens when Iran gets nuclear weapons or what happens to North Korea over the next five or ten years is that they realize nuclear weapons are not very useful. They have struggled very hard to get these things, but there isn't that much militarily that you can do with them. It is dangerous. Every new nation that has nuclear weapons is dangerous, because it increases the risk that there will be a war and someone will go off and use them.

But let me use this chance to reframe your question a little bit and make it stronger. You might have said to me, "Ward, you're a nice fellow. These are interesting arguments. But Eisenhower said nuclear weapons are important. Kennedy said nuclear weapons, Khrushchev said, Stalin said, Churchill, all these leaders said nuclear weapons are important. Generals say they're important. The Iranians obviously think they're important. The North Koreans think they're important. How could you possibly be right?"

I think this is the answer. This is what I would say back. We struggle all our lives to get this [holds up a \$1 bill]. We spend long hours away from our families. Some people die in dark alleys, because they won't give up this. But this is a piece of paper. You can't eat it. You can't build a house out of it. You could make it into clothing, but why would you want to?

But the fact is that human beings have a unique and remarkable ability to imbue otherwise valueless objects with value. We create currency by common agreement. Then when the EU is invented, we change the currency, and suddenly these pieces of paper with these pictures and these colors aren't valuable and these other pictures are valuable.

Currency is a good model, I think, for nuclear weapons. What happened after World War II was that nuclear weapons became the currency of power, and if you wanted to be somebody and respected and a big deal in the international setting, you had to have nuclear weapons. In some ways, nuclear weapons are a perfect currency, because they are never used, so you never test their practical

value. You never find out if they really are that useful or not, because they are always hidden away in bunkers. They're just symbolic. It seems to me that that is the secret of why we worry so much about nuclear weapons and other people value them so much.

QUESTION: James Starkman.

Let's just talk a little bit about deterrence. There have been 4,500 wars in human history. Since World War I, poison gas, which was the deterrent between the two world wars, seems to have prevented a poison gas war in that interim period. Since the end of World War II, nuclear weapons, which came into being, seem to have deterred their use by anyone since Hiroshima.

Isn't it sort of *quod erat demonstrandum* [QED] that the deterrence value of these weapons of mass destruction is in effect?

WARD WILSON: Actually, history has lots of periods of peace, surprisingly long periods of peace in some cases. There was no war in Europe between 1815 and 1848, 33 years. You could say the cannon deterred war, but there had been cannons throughout the Napoleonic period.

The Europeans had almost 100 years of peace from 1815 to 1914, and they said the same things that we say now. They said, "Wars are really getting shorter and there are almost no wars. It must be that something's going on here. We're abolishing war. Technology—trains and railroads are making war shorter. Our culture, our manners, our civilization prevents war."

"There may still be wars in the colonies, with savages, but here in Europe," they said, "there will never be another major war. We'll never have a catastrophic war like that we did in the Napoleonic era. That could just never happen. We have all this new technology and we have interconnections between our businesses. It just won't happen."

Of course, they were savagely disabused of that notion by World War I.

It's possible—I don't believe it, but it's possible—that nuclear weapons deter war. But should we rely on that, given the tenuous nature of the proof? It's proof by absence. I've never been run over by a bus, but that doesn't prove that this lucky quarter that I carry with me everywhere to prevent getting run over by a bus is keeping me safe.

So I hear you. We haven't had a nuclear war. Absolutely true. There have been other wars, quite large wars. I'm just not persuaded that we should rely on that as evidence, particularly when the consequences of being wrong and having a nuclear war break out are 200 million dead here and 160 million dead in Russia.

QUESTION: Hello. I'm Ruth Stevens.

You make a compelling case, and it's so interesting. What are your thoughts about how we can get rid of these things?

WARD WILSON: You have to imagine that I'm a guy who has been living in a cave for 30 years thinking and writing about nuclear weapons. Just recently, I have been traveling and talking to diplomats a little bit, and what I'm struck by is how smart diplomats are. They have an entire skill set that ordinary people just don't even have.

So I'm going to duck that one. I think it's a two-step process. The first and most important step is that people say, "Well, maybe they are more clumsy than useful and maybe we should rethink, and let's

reevaluate." Once you have doubt about nuclear weapons, then what I believe is the inflated currency about nuclear weapons starts to be devalued a little bit. Then you turn the diplomats loose. Then their problem will be easier, because nuclear weapons won't be magic and everyone won't be clutching to them like drowning men.

I wish that I had a really smart answer, but I talk to diplomats and I know that they know stuff I don't know.

QUESTION: Finn Fogg.

Would you advocate that the United States give up its nuclear weapons unilaterally, declaring them to be clumsy, useless dinosaurs of the past, and let's get rid of them?

WARD WILSON: I ought to. And Freeman Dyson says it wouldn't be a bad thing. It would certainly jumpstart the process of everyone saying, "Well, you know, maybe." There's a military case as well. You could mount conventional warheads on intercontinental ballistic missiles [ICBMs] and still have the ability to take out almost any military force anywhere in the world.

One of the things about thinking about a world without nuclear weapons—let's say you're cheating and you build a force of 60 weapons. Then you announce you've got the weapons and tell everyone, "Do what I say." The first problem is that maybe the United States has conventional weapons on ICBMs. They certainly have stealth bombers. They have massively effective spy satellites and drones and things we don't even know about. I would be concerned, even with a relatively large force, that if it's anywhere where it could be found, the United States would find a way to take it out.

From a military standpoint, we're unbelievably powerful militarily, and strong. One of the reasons it's difficult is that people around the world say, "No, we're not giving up nuclear weapons. You're the strongest. You'll be even stronger in a world with no nuclear weapons."

So there's a case to be made, and people make it.

I'm not there yet. I think that ultimately we have to all come down together and that it's a process where we are all involved. I think politically it would be really difficult in the United States. But the fact that it's something that we could even think about is, I guess, hopeful. I don't know.

QUESTION: This is Shrideep Murthy.

You presented this idea about a world without nuclear weapons. To reach that stage, we need to stop the spread of nuclear weapons. What is your view on a nation trying to acquire nuclear weapons? Should the rational world intervene aggressively, like in the case of Israel-Iran and the way it was presented at the United Nations? What are your views on it?

WARD WILSON: I wish I was smart. I do. I wish I was smart about how you get countries to do something or not do something. I know a little bit about nuclear weapons. International diplomacy and getting leaders to do things that they don't want to do, and coercing them and persuading them—I think that if you can persuade Iran that nuclear weapons maybe aren't that useful and get them to go back and look at the history of Hiroshima and think again about it—they're smart guys. They have good scholars.

I'm working with a group in the U.K. that's proposing a series of Iranian-Western strategy experts coming together and talking about Iran's strategic issues from both perspectives, as a way of trying

to do exchanges about just this kind of issue, trying to talk to them a little bit and say, "Well, you know, there's not all that much you can actually do."

I don't know. It's a good question. How do you take this stuff and practically apply it? It's a good question. I'm not that smart.

JOANNE MYERS: I just have to add, you're a historian, a pragmatist, a realist, and also an idealist. I thank you for presenting your arguments with us. It was an interesting conversation. Thank you.

Audio

What if everything we believe about nuclear weapons is wrong? "Reexamine the facts and you'll see that the arguments for nuclear weapons aren't powerful; they're preposterous. They are an unpersuasive collection of wishful thinking held together by nothing more than fear and rationalization."

Video Clip

What if everything we believe about nuclear weapons is wrong? "Reexamine the facts and you'll see that the arguments for nuclear weapons aren't powerful; they're preposterous. They are an unpersuasive collection of wishful thinking held together by nothing more than fear and rationalization."

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