

PUBLIC POLICY
AND
NUCLEAR THREATS

TRAINING THE NEXT GENERATION

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Revolution or Evolution?
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Albert Carnesale became chancellor of the University of California, Los Angeles (UCLA) in 1997. Prior to assuming the chancellorship of UCLA, Carnesale was at Harvard University for 23 years, serving as provost of the university from 1994 to 1997. His earlier career included positions in the private sector and in government.

Carnesale has represented the United States Government in high-level negotiations on defense and energy issues (including the Strategic Arms Limitation Talks, SALT I, with the Soviet Union), and has consulted regularly for several government agencies and companies.

The following is an edited transcript of a talk Carnesale gave to the first cohort of PPNT Fellows and Associates at the 2003 summer seminar.

Actually, none of my career was planned ahead. My undergraduate major was mechanical engineering. Upon graduation I went to work for Lockheed-Martin at their new nuclear engineering division. From that position, I learned some reactor physics, which led to me to apply to North Carolina State University for a Ph.D. in nuclear engineering. I was teaching there afterwards. During my sabbatical, I participated in the Nonproliferation Treaty negotiations and after I wrote a brief memo criticizing a proposed technical mechanism for monitoring. That was the work which got me involved in the SALT I negotiations and to be part of team for the ABM negotiations with the Soviet Union. By then, Harvard University had a new program for the "missing generation" created by the unpopularity of the Vietnam War. It recruited scholars who would be committed to security studies and international affairs disciplines. I went there to study nonproliferation. During the Carter administration, Carter had a big sixty-six-nation study done regarding nuclear proliferation and I headed its American division. These days, I'm less involved in government operations, although I still remain involved as a consultant through friends.

My objective here is to try to point out some of the things which haven't changed so much, even though people perceive it otherwise. If we talk about "continuity," why don't we start with "who's who?" in regards to the nuclear status of countries in the world? First, we have "declared nuclear weapons states," ones that have tested nuclear bombs and admit retaining them: Russia, the United States,

Britain, France, and China. Now we have India and Pakistan, both of which have finished testing. India first tested its nuclear weapons in 1972, and Pakistan went nuclear in 1998. We probably have a new member, supposedly North Korea. Second, what do we have under the "undeclared nuclear weapons states"? The list is pretty much confined to Israel. Then, the third category is what we call the "usual suspects": North Korea, Iraq, and Iran. The United State has always suspected they may get nuclear weapons. Add Libya and Syria as well, even though we don't have any hard evidence proving their actions. Finally, we have several countries—Argentina, Brazil, Australia, and Canada—who embarked upon nuclear programs but decided to give them up. The list includes Sweden and Switzerland as well. There is also South Africa, which may have tested weapons during the 1970s but has given them up. So, since 1975 the list of "declared nuclear states" has expanded by only two countries: Pakistan and India. Contrary to the public fear that every state is getting nuclear weapons, it is not happening now.

What is the incentive for acquiring nuclear weapons? There are three major reasons: domestic pressure, security, and international stature. Let me start with security. A state tries to acquire nuclear weapons to deter adversaries, or it may want to coerce others or threaten them. Second, a state may be under domestic political pressure, for example, from the military, from scientific establishments, and also regarding the cost of defense. One approximation of nuclear programs is that they are cheaper to maintain than conventional forces. Third, a state thinks it may enhance its international status somehow by acquiring nuclear programs. For India, within weeks of its testing, U.S. officials planned a formal talk with the country. This logic hasn't changed.

Let us consider two countries, A and B. "Have" means you have nuclear weapons and "No" means you do not.

		A	
		Have, Have	Have, No
B		No, Have	No, No

Which situation would you, as country A, find most desirable? You having and B not, right? But if you can't have that, would you rather every country had them or no country had them? It turns out that "no country had them" is the majority view in regard to nuclear programs. This is why both the United States and the Soviet Union were careful about proliferation. During the Cold War, The Soviet Union did not tolerate their protégés getting nuclear weapons, so United States didn't have to worry about North Korea and Iraq.

The nonproliferation regime has been around for a while, which is a continuity. Another continuity is the ongoing pessimism regarding the regime. The nuclear weapon as a technology is more than 50 years old,

and any industrialized country can develop it if it wants to. Fission bombs are very easy to design. For those who argue that bombs cannot be used without testing, counterexamples are those weapons dropped on Hiroshima. They were designed but never tested prior to use. Yet the number of states that have nuclear weapons since the nonproliferation regime was put into place has only increased by two.

Another thing that hasn't changed a lot are delivery systems. We often think of ballistic missiles for delivering nuclear weapons. Ballistic missiles are mesmerizing. But the last thing that a newly emergent nuclear state would want to do is to put its nuclear weapons, of which it only has a few, on to its first-generation ballistic missile. Yet this is the impetus for ballistic missile defense. That's why nuclear weapons in developing countries are not much of a threat. There are simpler ways of delivering nuclear weapons if all you really care about is using them for coercing other countries into changing their behavior. It is important not to confuse nuclear weapons and delivery systems.

Now, let us think of changes in recent decades. The biggest change, even if it is not very recent, is the collapse of Soviet empire, and near-collapse of Russia itself. It had instant implications for the nonproliferation regime since before the collapse, you have one declared weapons state, but after the collapse, the United States suddenly had to face 4 states—Russia, the Ukraine, Belarus, and Kazakhstan. Therefore, the first item of business is to worry about loose nukes and who will be in charge of them. The smuggling of nuclear weapons and nuclear brain drain leaking into other countries are also of concern here. The United States has spent a lot of resources dealing with the loose nuke problem. In addition, due to the regime collapse, Soviet influence on its clients also has declined, for example, in North Korea and Iraq. Then, we have to worry about non-state actors including terrorist organizations like Al Qaeda.

Another big change is the rise of the United States as the sole military super-power. Now, the United States has no major adversary. U.S. foreign policy has always been shaped around a major adversary or two. We don't have foreign policy in the abstract; it's always focused on an adversary. That is why the United States has struggled so much since the end of the Cold War. Of course, we have the "axis of evil," in particular regarding nuclear threats. Let's turn to the members of the axis for a moment.

Iraq

Iraq appears to no longer be a threat, if it ever was. Although, to be fair there are reasons why people might have thought that Iraq was a nuclear threat. After the last Gulf War, we found a far more robust nuclear program than we had suspected. People who remembered that might have looked at the current intelligence and simply refused to believe that there wasn't anything going on. However, it a big step from being suspicious to making the claim that you have good intelligence showing evidence of nuclear weapons programs. In any event, Iraq is not a nuclear threat now.

North Korea

North Korea has enough plutonium to produce one or two nuclear weapons. That's for sure. What we don't know for sure is whether the plutonium has been separated from fuel rods or not. We believe it has. We have no idea whether those materials were assembled into a weapon or not. It would be

prudent to assume that they have. We also know that they have enough fuel rods for at least another half-dozen devices in a matter of months. We have some questions about the number of facilities that they have to reprocess the fuel rods. We know they have one, since we bribed them not to use it in 1994. There is some indication that there might be another one, we don't know. North Korea set aside the 1994 agreement, and withdrew from the NPT, which they can do. So now, what is North Korea trying to do? I don't know. And I don't know anybody who knows. There are many specialists on North Korea, but no experts.

First of all, this is a country that has demonstrated consistent paranoia. They seem convinced that the United States will attack them. They have been this way too long for it to be a bluff. So they believe that need a deterrent. Also, now they are part of the "axis of evil," and the United States has invaded another member of the "axis of evil" and has declared a doctrine of preemption. Looking at this, the North Koreans want to get as many nukes as they can get, especially if they can do it secretly. Another way that they might look at it is that this is the greatest bargaining chip ever, something they can sell. They'll just scare the hell out of us and they can get more than fuel oil, maybe they can get a non-aggression pact or diplomatic recognition. If they really want to bluff, they need to go ahead with their development program in order to make bluff credible.

Now, what are we going to do regarding the North Korean nuclear program? There are a lot of people in the region who are concerned about this. Some, like South Korea, care about this a lot. Our options are also limited by the fact that North Korea is a black box. If you just attack North Korea because they have nuclear weapons, and you don't get all of them, you will make somebody very angry. So what do I think is plausible? Diplomacy is still our "least bad" option. I don't think we'll preempt. We'll buy them off; give them concessions and recognition, maybe even a non-aggression pact.

Iran

First a little history. Their first reactor was required 1970 from the United States under IAEA safeguards. Germany and France also had deals for fuel. When the Shah fell, there were six plants under contract, two of which were mostly complete. When the Shah fell, nuclear power in Iran suddenly became a very bad thing. The United States suspects that Iran has an enrichment facility. Now, if you are interested in having a national nuclear energy program, it makes sense to have an enrichment facility. The trouble is that the same facility can be used to make highly enriched uranium which can be used for weapons. You can ask, why should Iran want to have a nuclear power program when it has all of that oil and gas? I don't know, but you could have asked the same question in 1970, 1974, and so on.

What are they trying to do? I don't know. It could be about nuclear power, but Iran is located in a tough neighborhood. Two nuclear states and Israel are within range, and the five nuclear Security Council members can reach Iran too. None of them are particularly friendly states from Iran's perspective. No wonder Iran would attempt to acquire a nuclear weapons system of its own. The same logic as North Korea applies. Then what are our options? Russian and European countries have extensive inspection regimes within Iran and currently nobody is declaring Iran has any secret nuclear development programs. Preemption is not as unattractive in Iran because Iran does not yet appear to have

weapons—the risks of missing something are smaller. Diplomacy is lousy but it is the best option we have. We have to find out whether they have complied with the agreements. The rhetoric of "axis of evil" doesn't serve our purpose of appeasing Iran.

Non-state actors

Let us turn to non-state actors, notably terrorist groups. The basic difference is that terrorists can't be deterred. There is no homeland at risk. Unrelenting pursuit regarding their finances, facilities, and leadership is the best we can do. The other piece of it is that we're not worried about very many terrorist groups acquiring nuclear weapons who are not state sponsored terrorist groups. That's what's behind Afghanistan. The same claim was made for Iraq regarding Al Qaeda, but it very unlikely that Al Qaeda would work with a secular government. We did find an Al Qaeda cell in Iraq, but if that's all it takes to show an alliance, then the United States is allied too, since there was a cell in Buffalo. In conclusion, I would like to point out that nuclear proliferation has occurred far more slowly than anyone could have anticipated. Why that is, I don't know. I do know that a lot of hard work between states, governments, and non-governments has gone into helping keep the spread of nuclear weapons slow. There were times when we had to do things that were not that pleasant, but it is a problem that is worth working on. Maybe nuclear proliferation is inevitable but the pace certainly matters. Limiting the spread of nuclear weapons and preventing their use are critical—once the taboo on nuclear weapons use is broken, there could be an avalanche of proliferation.

Q and A

Q: You mentioned that diplomacy is the "least bad" option. What sort of diplomatic steps do we need to take?

There are some general things, but we need to look at countries case by case. In regard to North Korea, they were quite specific in the 1994 Framework Agreement. So what more can we add? We dismissed their paranoia out of hand, but for North Korea, it doesn't seem so improbable. Maybe the United States needs to offer something, such as a non-aggression treaty. It would be effective to suggest legitimization, including diplomatic ties. Regarding Iran, it is more difficult. Iran doesn't pose a nearly the immediate threat that North Korea does, though. But regionally, the Middle East is a more volatile area and we need to consider what kind of assurance we can provide to Iran. I don't know what Iran's motives are, but I won't start by thinking that diplomacy is hopeless.

A comprehensive approach to nonproliferation can be summarized using eight Ds:

1. **Disuasion:** Trying to talk before countries acquire weapons, de-emphasis of nuclear weapons, moving to reduction, test ban, security guarantee, threatening and employing sanctions
2. **Denial:** Nonproliferation, preventing leakage from Russia, active denial (preemption of facilities)
3. **Diplomacy:** Help adversaries or neighbors including economic/political sanctions
4. **Disarmament:** Difficult but not impossible e.g. South Africa

5. **Defusing:** Make their nuclear programs safer by providing technical assistance. For countries like Israel, India and Pakistan. Make nuclear weapons pose less of a threat. Creates a moral dilemma
6. **Deterrence:** Classical argument, but this time we use nuclear weapons to deter conventional weapons.
7. **Destruction:** Going after their arsenals, forces, and infrastructure.
8. **Defense:** Missile defense system falls into this category

Q: I would like to ask some biographical questions about your involvement with SDI. What do you think of the impact of the NPT in the progress of missile defense?

The first major thing I did in SDI was before the program was announced. The Department of Defense commissioned an internal study through SAIC on the implications of national missile defense systems. I was the deputy director of that study, and one of our conclusions was that if we really wanted to solve the missile defense problem, then we needed to have advanced technologies. Reagan interpreted that to: We have found the solution. It's the advanced technologies. But the Reagan administration never withdrew from the ABM treaty and the principal reason was that the Soviet Union already had an ABM system while we only had designs on paper. Was testing our designs worth breaking the ABM treaty? The Reagan administration came to an end before there was anything worth testing. However, the current Bush administration came to the opposite conclusion. They say it might not be needed now, but better to get started when there aren't any adversaries. Right now is a relatively safe time to get out of the ABM treaty and go forward, but it's wasteful and I don't think it is the best allocation of resources.

Q: I would like to ask about reactors in Iraq, Israeli fears, and the preemptive attack during the 1980s. What were the consequences of the Israeli action?

When I look back, my concern at that time was that it would unravel the Nonproliferation Treaty regime. It was true that those reactors posed no immediate threats. Furthermore, they were under inspection and under control, but Israel implied they did pose threats and operated surgical strike bombing to dispose of them. Responses of United States then had more to do with leadership. At the time during the Reagan administration, Israel was not so criticized. The concern was how to sustain the nonproliferation regime. If you know you're your facilities would be in danger even if you abide by the agreements, which countries would remain?

Q: What is your opinion about Bush administration's current strategy? What would be the desirable strategy to stop nuclear spread?

Since we are the reigning power in conventional weapons, it is overwhelmingly in our interests to maintain the nuclear taboo. As we can beat the hell out of everybody without nuclear weapons, we don't encourage other countries to develop nuclear programs. Nuclear weapons are an equalizer in a sense and that's why I'm concerned about the current administration's rhetoric of "preemptive war". The more other countries are concerned about U.S. attacks against them the more they will try to acquire nuclear weapons.

Q: In a "defusing" strategy, a nuclear nation providing technological aid to states out of the NPT regime, wouldn't it be violating the treaty?

People tend to feel pretty strongly about recognizing anything that would appear to be condoning the use of evil, like clean needles. It is just not acceptable. Even though there exist principles, there is also legitimacy. If the idea was to be put forward, countries may not be against giving technological aid.

Q: If we were to give those countries in question aid in exchange for stopping nuclear weapons, wouldn't it be giving them wrong motives?

I'm not a believer in the international relations theory of multi-polar stability so-called, "more countries with nuclear weapons will create more stability." As far as removal of military presence is concerned, it is closely related. In Northeast Asia, regional stability is at stake mostly with the perceptions of Japan and South Korea. North Korea doesn't need nuclear weapons to attack Seoul. They can do so with conventional artillery. It's not worth the trade-off of U.S. army withdrawal from Northeast Asia.