Drell and Garwin on Nuclear Proliferation

by Art Hobson

In its Aug/Sep 2006, the APS (American Physical Society) ***News*** published an interview with Sidney Drell and Richard Garwin about nuclear proliferation. Both experts have been deeply involved in nuclear weapons development and policy for over 40 years. Here's a summary.

Q: What is the role for nuclear weapons today? How does the president view them?

Garwin: We would certainly use them in response to a nuclear attack. But we also won't promise not to use them against non-nuclear states. This is a very great mistake. "Some folks were horrified at the cavalier approach to using nuclear weapons in the current dispute with Iran as if they were just another kind of conventional weapon."

Q: What is the right size arsenal?

Garwin: There's insecurity in having vast numbers. We should reduce to 1000 weapons within a few years, on the way to having a few hundred in the world all together.

Drell: I can't think of any value to having more than a few hundred. But I'm not arrogant enough to say "I know they have zero purpose, get rid of them."

Q: What do you think of the proposed development of a Robust Nuclear Earth Penetrator -- the "bunker buster"?

Drell: The to proposal build a bunker buster with no side effects is nonsense. For example, a one-kiloton bomb that is dropped and penetrates as deep as practical into hard soil before detonating would still cause a crater larger than the World Trade Center and put a million cubic feet of debris into the atmosphere.

Q: A new weapon, the Reliable Replacement Warhead (RRW), has been suggested to address problems of aging and "responsiveness" in the current stockpile. Should we develop it?

Drell: It makes sense if it focuses on maintaining confidence in the arsenal, but it would be dangerous if the RRW program were used to make new weapons for new missions.

Garwin: We are already making replacement warheads (using the old designs), and they are reliable. There's no need for a new RRW.

Q: In view of Iraq and Iran, are our nonproliferation policies failing? Is it inevitable that more countries will develop nuclear weapons?

Garwin: It's not inevitable if we get more serious about the problem. The problem is that non-nuclear states can get close to having nuclear weapons while remaining within the Non-Proliferation Treaty. The way to change this is to modify the NPT so that any facilities that countries obtain as a member of the NPT must be returned or destroyed if they drop out of the NPT.

Drell: Only eight countries have nuclear weapons – an extraordinarily successful achievement over 61 years. New NPT restrictions are needed. Countries that can enrich uranium need special restrictions to keep them from making a weapon. There should be challenge inspections at all suspect facilities, not just at declared facilities. Countries should work together to prevent shipment reprocessing facilities should be restricted and fuel service guarantees should be provided in exchange.

Q: Are we living in promising times? Critical times? Dangerous times?

Drell: We've survived the Cold War. That's a tremendous achievement. Our problem today is different and more difficult: keeping weapons from dangerous people for whom conventional deterrence doesn't work. We're at a crossroads. If Iran and North Korea get away scot-free and have nuclear weapons, we'll lost the benefits of the NPT and the world will become more dangerous: more nuclear nations, more confrontations, and a lower barrier to nuclear war.

Garwin: We're at a crossroads, and we're losing control. We're not doing enough, not spending enough, on this problem. For example, we must secure plutonium and uranium in Russia. But things can get worse. "I believe we'll see, within the next few years, one or more terrorist nuclear weapons explode in an American city and it will kill 100,000-200,000 people. It's going to be very bad, unless we take measures to survive the social and economic disruption that's going to follow. A gun-type weapon [the design used on Hiroshima] will have the same yield whether it's dropped from an airplane of assembled on an apartment floor in Manhattan. We don't have all that much time."

(***Editor's Note***: Art Hobson is Professor of Physics Emeritus at the University of Arkansas, editor of ***Physics and Society*** (newsletter of the APS Forum of that title), and the chair of the Physics and Society Group of the American Association of Physics Teachers. Although he has preserved the interview format in his summary, it is much condensed from the original.)