

The evolving discourse on the humanitarian impact of nuclear weapon detonations

Second Conference on the Humanitarian Impact of Nuclear Weapons, Nayarit, Mexico 13 February 2013. Remarks by UNIDIR (Tim Caughley)

The purpose of this Conference is to improve the collective understanding of the humanitarian impacts of nuclear weapon detonations. It will extend the discussions of Oslo last March, especially about longer-term consequences.

This is important. It helps to ground nuclear weapons firmly in the context of the full range of their consequences above and beyond the security-based properties attributed to those armaments by their possessors.

To date, where nuclear weapon use has been discussed, the debate has often been constrained by immediate considerations. In the Cold War it was the risk of a large-scale thermonuclear conflict between the US and Soviet pacts. The daunting scale of the likely consequences served to obscure other circumstances in which nuclear weapon detonations might occur – by accident, misadventure, miscalculation, or by regional war.

Similarly, in the last dozen years or so, fears about an improvised nuclear device detonated in a city by terrorists have taken centre stage, blinding us to the full range of plausible possible occurrences.

Notable exceptions, of course, are studies that are the subjects of presentations later today by Doctors Robock and Helfand of the International Physicians for the Prevention of Nuclear War and its US affiliate, Physicians for Social Responsibility. Those studies analyse the consequences of conflicts including regional nuclear war and assess vulnerability of the world to economic and social disruption from nuclear weapon detonations in populated areas.

Recent technologically-related, complex disasters have also underlined the potential for widespread humanitarian upheavals.

Civil nuclear accidents are different from nuclear weapon detonations in many respects. But major radiation events like those at Chernobyl in 1986 and the Fukushima Daiichi plant in 2011 demonstrate nonetheless that nuclear-related disasters can be unexpected, and difficult to respond to.

They also underline two important points for this Conference:

First, because an event is infrequent, does not mean that it will not happen. Low probability-high consequence events are ‘black swans’ – they do happen, and will happen sooner or later (whether by accident or design) although not necessarily within a foreseeable timeframe.

Failure to acknowledge this eventuality can mask from us the need to understand both how best to respond to the risk and also the extent, if any, of our capacity to be able to do so. This is all the more important in the case of man-made objects with the explosive power of nuclear weapons.

Events as we have witnessed in the case of nuclear power plants may be brought about in ways that appear ‘freak’ in nature at the time, but are more plausible with the benefit of hindsight.

In the Three Mile Island incident in the 1970s, a diagnostic light that malfunctioned in the control room led plant operators to believe that an emergency system to cool the reactor was working when it was not, almost causing a major nuclear accident.

In the Fukushima Daiichi accident, the combination of circumstances that led to the disabling of its emergency coolant generator, in the wake of a major earthquake and a massive tsunami, had not been anticipated by the builders of the reactor plant.

In the nuclear weapons context, those incidents suggest that scenarios in which detonations might occur could be broader than we usually imagine when design flaws, human error and bad luck are taken into account.

They suggest also that national and international policy-makers should not be sanguine about the absence of nuclear detonations since the catastrophic events in Hiroshima and Nagasaki almost 70 years ago, the impacts of which remain palpably with us today as testified by the Hibakusha earlier this morning.

The second point demonstrated by recent civil nuclear disasters is this. If tightly coupled technological processes like civil nuclear reactor control systems can fail in unpredictable, spectacular and lethal ways, we can ill afford to be complacent about nuclear weapon control complexes.

Because of the inherent difficulty in assessing cause-and-effect in such environments, minor accidents or malfunctions combined with human error have consequences that are non-linear and unpredictable and that may spin rapidly out of control. The sudden, unexpected surge of power during a reactor systems test at Chernobyl is another case in point.

It means that there are limits to safety – thresholds of hazard below which it is simply not possible to go without removing the technology from service.

As the saying goes, if someone invents a system alleged to be foolproof, nature will invent a better fool.

It is worth stepping back then, to consider further what the consequences of the harm and disruption from a nuclear weapon detonation event in a populated area could be.

This is where the Mexico Conference fits in.

In these respects, the findings of the Oslo Conference are a good start for our discussions here since – and I quote from one of those findings: ‘The effects of a nuclear weapon detonation, irrespective of cause, will not be constrained by national borders, and will affect states and people in significant ways, regionally as well as globally.’

Of course, the international community’s endeavours to understand the consequences of a detonation of a nuclear weapon are but the first step.

At some point, it is natural that those engaging in such efforts will reach conclusions that the groundwork has been clearly laid, that the case has been made, that humanitarian concerns about nuclear weapons trump all other considerations.

The learning phase does not simply cease. However, the basis of evidence accumulated offers a platform on which the international community would weigh what could best be done to reduce the risk of a nuclear weapon detonation.

The Nayarit Conference seems well poised to advance the discourse on the humanitarian impact of nuclear weapons toward that decision point.