TERRORISM AND MASS DESTRUCTION WEAPONS: REALITY OR "DAMOCLES" EFFECT?

François Haut

Conférence prononcée lors de la rencontre *World Terrorism and Political Violence*, organisée par l'Université Victoria de Wellington (Nouvelle Zélande)
14-15 mai 2003

INTRODUCTION

September 11, 2001 unfortunately relieves us of the need to sensitise you to terrorist threat or developing theories regarding terrorist aims and methods. One had been able to see the live reality of world chaos… live.

WTC and Pentagon actions were immediately followed by the discovery of some letters, each containing a little of anthrax germs killing, several persons and revealing another type of threat many people doubted of, even if its origin isn't obvious.

If today's terrorism has been able to change its nature or origins, it is also able to change its tools, adapting itself to more and more sophisticated techniques, according to their availability in the new world disorder.

Most alarming of these upgrading capabilities of terrorism, and not improbable today, is the use of so-called weapons "of massive destruction" - chemical, biological or nuclear or "NBC" or also CBRN when Radiological threat is treated separately.

An academic author, Rodney Stark[1], gives us an interesting definition:

"NBC terrorism is the purposeful or threatened use of politically, socially, economically or religiously motivated violence via nuclear, biological, or chemical weapons conducted by a terrorist group, whereby the primary mechanism to influence the target is through the inducement of fear, anxiety, and/or destruction."

CBRN or NBC terrorist threat exists. It is by nature asymmetrical, even more than "classical" terrorism. So, we have more than ever to try and understand this threat and figure the new rules it induces.

If the use of NBC weapons is to become a standard, like hijacking used to be, various questions arise:

• What are these weapons?

• What are the limits of their use?

• Would they really be used as mass destruction devices by terrorists?

[1] : RADS, BUGS, AND GAS: THE THREAT OF NBC TERRORISM, Thesis, Department of Defence and Strategic Studies Southwest Missouri State University, 14 May 1999, Master of Science in Defence and Strategic Studies

I : NBC TERRORIST THREAT

POINT I: I will first analyse NBC terrorist threat.

NBC threat comes, at least, from two different sides.

• First side, conventional attacks, like bombings, could hit NBC "targets".

• Second side, terrorist could use NBC "weapons" and it has already happened.

A- Conventional attacks on NBC targets

One knows these targets are quite weak, even if their security has been significantly reinforced.

We remember Sevezo in the 70's. In 1984, the Bhopal catastrophe induced 2 500 dead following a problem in a pesticide factory. This same year in Mexico City, the explosion of liquid gas tanks induced 4 248 dead.

Everyone has in mind the nuclear accident at Chernobyl in 1986 that demonstrated the structural vulnerability of some reactors.
Terrorism was not the cause but these events show that our societies have many vulnerable targets.

What occurred by accident could happen voluntarily tomorrow. Let us remember that one hundred years ago, it was necessary to enter each house to plunge a village in the darkness. Nowadays, destroying a single electric generator is enough. Becoming more complex and more sophisticated, our world is also more vulnerable to sabotage.

To date, terrorists' modus operandi has utilized predominantly conventional weapons.

Theses weapons, as explosives, could be used against plants, nuclear for instance, according to Bruce Hoffmann[2], to create hostage situations, blackmail, stealing of nuclear material, or to destroy the facility and why not to blow it out to create a Chernobyl-like situation.

Oklahoma-City bombing illustrates what a truck bomb attack could do to a concrete building.

9/11 illustrates what a plane could do to a building…

As one notes that today suicide operations are generalized with Muslim fundamentalists, involving not only poor and desperate people but also educated ones, accustomed to western way of life, this type of attack is even more conceivable, with the huge effects one can guess.

B- NBC "weapons" and some examples of their use

a) Some examples of NBC terrorist armoury

1- Nuclear and radioactive "ammunition"

In theory, nuclear terrorist ammunition range from ready-made weapons to components.

Pre-assembled nuclear weapons were allegedly available from former Soviet Union where massive

[2] : Bruce Hoffman, "Terrorism in the United States and the Potential Threat to Nuclear Facilities," Rand, Santa Monica, CA: Rand Corporation, January 1986.

stockpile is said to exist[3].

These pre-assembled weapons could be "suitcase nukes" weighing less than 35Kg as well as nuclear artillery projectiles used in the proper way.

The late General Lebed alleged that many of these "suitcase nukes" could not be accounted for [4]. But it looks like there is no evidence even of their actual existence.

But it's also said that one can build "home made" nuclear bombs: they are not so easy to manufacture because of the necessary raw materials and technology but this threat cannot be completely put aside.

In June of 1996, German authorities arrested a Slovak engineer on suspicion of smuggling 6.1 pounds of Uranium into Germany. In April 1997, Russian police arrested a group that tried to sell 11 pounds of Uranium-235 stolen from a production plant on Kazakhstan. And three men were arrested in France, in July 2001, with 5 grams of highly enriched Uranium 235.

Never enough to manufacture a full-scale nuclear bomb that requires 2Okg of Uranium and 8 of plutonium. But…

But the fissile material of non bomb-grade, like Cobalt or Caesium is easily available and could also be used directly[5] on the basis of its radioactive effect, with a fair amount of success: injuries, economical disruption and a great amount of fear.

Aside immediate death, nuclear devices cause radiation exposure, which is measured in RADs, or "Radiation Absorbed Doses".

For instance, short-term exposure to 1,000 RADs affects the central nervous system, inflict coma, convulsions, and death within days. A level of 800 RADs induces diarrhoea and vomiting, which in some instances can be confused with conventional shock. Recovery is unlikely and death occurs within three weeks of exposure. With 400 RADs exposure the victim will experience mouth ulcers, loss of teeth and hair, and immune deficiency; death can come after about 30 days. Survival is possible but unlikely.

With exposures of 150 RADs or less the victim can recover with proper treatment after experiencing symptoms of nausea[6].

2- Chemical agents

These agents are mostly gases. They are not very new, but in terms of terrorism, efficiency counts more that technology.

Sarin: neurotoxic agent, invented by the German before the Second World War. Colourless to dark yellow liquid; sometimes a discrete odour of painting. Respiratory and skin penetration. Immediate effects: tackles central nervous system, convulsions, and paralysis of the respiratory centres, quick death. In theory (if used with the suitable aerosol), a coffee spoon of sarin can kill 10 000 people.

---

[3] : Thomas B. Cochran, Robert S. Norris, and Oleg A. Bukharin, Making the Russian Bomb: From Stalin to Yeltsin, Oxford: Westview Press, 1995.

[4] "Missing Nukes," MacLean's, Volume 110, Issue 37, (15 September 1997): 29.

[5] : Usually called a radiological dispersal device (RDD).

[6] : John Norris and Will Fowler, NBC: Nuclear, Biological, and Chemical Warfare on the Modern Battlefield, Herndon, VA: Brassey's LTD, 1997.

VX: invented by the American during the Fifties, odourless and colourless. Similar to the Sarin, but 300 times more toxic. Oily consistency. Mortal in a few minutes after convulsions and great sufferings. According to revelations made in July 1998 to the British daily newspaper "The lndependent" by General Wafiq Al-Sammaraï, former head of the Iraqi military information, gas VX was used on April 17 and 18, 1988 against the Iranian Guards of the Revolution during the battle of FAO, provoking panic in their ranks.

Soman: colourless to dark brown liquid, odour of camphor.

Tabun: colourless to dark brown liquid, odour of painting.

Mustard Gas.

3- Biological agents

Anthrax: very stable bacillus, used as weapon by the United States in the Fifties. Sores or blisters form on hands and forearms; non-specific chest cold symptoms followed by respiratory distress, fever, shock, or death. Death results from pneumonia, systemic infection, and organ failure. In theory, 1 gram of spores of anthrax could kill out million people. Possible vaccination; the only known treatment is fast administration of massive quantities of antibiotics.

Botulinum: 1 to 12 hours incubation. First symptoms are drooping eyelids, dry mouth and throat, difficulty of talking and swallowing, blurred and double vision. Paralysis resulting in asphyxia. Death occurs within 24 to 48 hours. In theory, under ideal dropping conditions, 35 g of Botulinum could kill 60 million people.

Ricine: it's a very easy to produce biological toxin. 6 000 times more toxic than cyanide; no known antidote. As fast as 5 minutes to 1 hour incubation. The likely symptoms are coughing, tightness of the chest, difficulty breathing, nausea and muscle aches. This progresses to respiratory duress and death within 36 to 48 hours. This is the poison used in London in 1978, in the case known as "The Bulgarian umbrella".

Pulmonary plague: bacillus with strong capacity of contamination; respiratory tract; 2 at 6 days of incubation; high fever, headaches, general aches, extreme weakness, glandular swelling, pneumonia, haemorrhages in skin and mucous membranes possible, extreme lymph node pain. This disease only lasts for 1 to 2 days before death occurs.

Ebola fever, Marburg fever, Smallpox, etc: correctly widespread, these exotic pathogenic agents can cause artificial epidemics, in theory more lethal than a chemical or even a nuclear attack.

In October 1992, during an epidemic of Ebola fever, some "chemists" of the Aum sect went to Zaire to collect strains of the virus for their apocalyptic program.

b) Examples of actual use or attempts

In the 80's, in a safe house of the Red Army Fraction, in Paris, was found a biological laboratory. It was supposed to have made quantities of Botulinum toxin but it is believed that none was used.

• The first confirmed and emphasized case of use of chemical agents by terrorists is quite recent. In March 1995 several groups of the Aum sect spread in the subway of Tokyo with bags filled with Sarin gas - 6 or 7 litres, approximately 30% pure. There were more than 5 500 injured and 12 death people.

When police carried out the systematic searching of the buildings of the sect, they found various biological agents and a great quantity of chemicals dedicated to the manufacture of Sarin, but also of VX and Mustard gas.

The attacks of confined surroundings were studied in many countries, of which France. The Paris metro was subject of a detailed analysis: what comes out is that one cannot dominate the flows of air circulating in the underground areas of the network. For example, if a terrorist spreads a radioactive substance using the ventilation network (easily accessible from the outside) or uses an aerosol to spray a chemical or biological substance inside the network, the contamination will be very quick. The only answer would be to stop the trains immediately and proceed to evacuation of all passengers.

Before 9/11, France had set several plans dedicated to specific threats.

After the metro bombing in the "Saint Michel" station, the General Secretary of National Defence defined a global frame to respond to terrorist attacks: "Piratome" for nuclear attacks, "Piratox" for chemical or toxic ones and "Biotox" for biological risks.

This last plan, as the others, was classified till initiated in 1999. But in October 2001, after Anthrax letters in the US, its outline was publicly released: prevention, surveillance and alert and crisis management. This plan that involves several departments includes control of circulation and production of pharmaceutical products, detection and declaration of certain diseases, availability of vaccines and coordination of emergency services with all local hospitals.

• Approximately 25 attempts of use of biological or chemical lethal agents are publicly known, mostly simple threats with financial motivations rather than political serious attempts.

This figure is thus a minimum that does not takes into account similar actions that were not revealed.

- In 1972, in Chicago, a right-wing extremist, member of the "Order of the Rising Sun", was arrested in possession of 35 to 40 kilograms of typhoid bacteria cultures with which he planned to contaminate water tanks of the city, St Louis and other major Midwestern towns.

- In 1976, letters were mysteriously sent to mayors of various American cities. The adhesive of their envelope contained mortal germs.

- In 1983, an US police unit arrested two brothers in possession of about tens grams of lethal biological agents.

- In September 1984, a sect contaminated salads in the restaurant of an Oregon village "to influence the result of a local election"; 751 people suffered salmonella.

- The routine of laboratories can sometimes contribute to the diversion of microbe cultures. In September 1984, a bulb containing a culture of tetanus was thus defrosted and sent through the mail in the suburbs of New York.

- In 1989 an American scientific team showed that a fly of Mediterranean origin whose larva develops in orchard fruits, had been voluntarily introduced into various places of California. The mayor of Los Angeles and some newspapers received a letter in which a group asserted this act to express its opposition to Californian husbandries.

- In January 1994, the British "Animal Liberation Front" sent by the mail various envelopes containing the remains of syringes infected by HIV virus.

- In March 1995, four members of the "Minnesota Patriots Council", Douglas Baker, Richard Oelrich, Dennis Henderson and Leroy Wheeler, were convicted of conspiracy charges under the "Biological Weapons Antiterrorism Act" of 1989 for planning to use Ricine against Federal Agents.

- The same year, the police stopped the preparation of an attack by neurotoxic agents in Disneyland.

- In May 1997, the British police stopped five Islamists related to the GIA in possession of the formula

of the sarin and various products used for its manufacture.

- In 1998, there were threats - real or false? - of contamination by Anthrax spores of items bought in Great Britain.

- The first example of nuclear terrorism in the post-Cold War era occurred in November 1995 when Chechen rebels placed a package of radioactive material in a Moscow park. Chechen separatists placed a box containing some 30 pounds of Cesium-137[7] at the entrance of the park.

The perpetrators omitted explosives that, if used to detonate the box, would have spread radioactive material throughout the park, contaminating the blast area for some time.

[7]Cesium-137 is a radioactive material that causes cancer and other severe health problems when it comes into contact with human skin, is ingested, or is inhaled.

II : LIMITS OF TERRORIST NBC THREAT

POINT II: one must know the limits of this threat: terrorists cannot use the NBC means the same ways States could.

Today's terrorism is almost non state-sponsored; so it may be more flexible but has anyhow less logistics.

First, terrorists need to acquire NBC weapons

Second they may have technical difficulties to use them.

A- What acquisition limits for NBC weapons?

NBC weapons can theoretically be obtained from some States but the terrorists could also possibly manufacture some of them.

a) From countries allegedly manufacturing NBC weapons

I won't enter in a theory to guess who has or has not an NBC capacity, that's not the point.

If some States may have an NBC arsenal, it's not likely that they would share a part of it with any terrorist group they do not control.

As State sponsored terrorism is almost inexistent nowadays, most groups have their own ways for making money and become quite wealthy: usually drug trafficking. That means they somehow could afford buying NBC products.

But States seem to be reluctant either to sell parts of their so-called secrets.

Meanwhile, a market seems to exist in the former Soviet Union where other non-state entities are said to be able to provide anything, including NBC weapons or components. But there is no real public evidence except with radioactive metals.

b) Self-Manufacture

But lessons learned from Afghanistan show that some groups could try and manufacture some of these weapons. Biological warfare agents are, for the most part, inexpensive and readily obtainable, and "cookbook" approaches are readily available. One such book is Silent Death, by an author who calls himself Uncle Fester[8]. Other titles from the same publisher include "The Poisoner's Handbook" and "Crimes Involving Poisons".

As we noticed earlier, nuclear devices are slightly more difficult to produce even if some handbooks exist like the "Poor Man's nuclear bomb"[9].

B- What technical limits of the use of NBC weapons for terrorist purposes?

The effects theoretically allotted to NBC agents should not be extrapolated into reality due to some existing stabilizing factors, for example:

- The spreading or dispersion method;

---

[8] : Loompanics Unlimited, 1989

[9] : Delta Press

- The purity, the volatility of the products.

The low number of victims in Tokyo metro attack is due to the wrong choice of dissemination method. There were only vapours of sarin and not pulverization by the means of an aerosol, which would have resulted much more lethal.

The rescue teams worked very quickly and the system of ventilation of the subway of Tokyo is particularly efficient compared to Paris. A similar attack in Paris subway would turn out with much more deaths.

At the end of May 1998, during the lawsuit of one of the leaders of the sect Aum, one learnt that a team of this organisation had started in April 1990 a biological attack against various American military bases in Japan by propagating germs of the Botulinum. Whereas this product is one amongst the more lethal, nothing happened.

The Aum sect made a new attempt in 1993 using Anthrax, which resulted quite as disappointing. The method of dispersion of these products was undoubtedly ineffective.

Spreading of the manufactured agent is the most delicate stage. It can be carried out in several ways: contamination of food or liquids, dispersion by spreading, using aerosols or vapours in closed area or open air and also using either small or powerful explosive loads.

Many experts favour NBC attacks in closed areas like subway stations, covered stadiums, etc. Governmental buildings, national monuments or hotels could also be privileged targets.

Water poisoning is an old story that goes as far as antiquity. So it's still a great psychological fear and many think that terrorist attacks could go that way and destroy our "wells" like in the times of crusades.

In fact, experts disagree on the capability of poisoning the population of a city through reservoirs of drinkable water: important quantities of polluting agents should be needed, and there is no clearly defined ratio between volume of water in the reservoirs and consumption of drinkable water by the urban community.

The "FARC", the Colombian Popular Army, a Narco-terrorist group, attacked the Chingaza dam, which provides a large part of the drinkable water of Bogota. They attacked it twice last January and February; they made important damage but did not use any chemical or other NBC product though we know they could use some, as for instance the residues of cocaine process that pollute so many rivers in the north half of South America.

Reasons are most systems of water treatment are very active (filtration, chlorination, etc.);

- Some of the water will never be in contact with the population and may remain in the reservoir during several months, which is enough to deteriorate some biochemical agents,

- and most of the water will mainly have everyday uses such as watering of the lawns.

<u>But what would happen if small tanks of residential buildings were poisoned?</u>

III : POTENTIAL NBC TERRORIST TACTICS

POINT III: According to these factors, what could be potential NBC terrorist tactics?

September-11 taught us many lessons, but what's next? What trends?

Usama Ben Laden said in 1998 that he was not considering as a crime to try and obtain NBC weapons, we must consider it.

The so-called Al Qaeda has revealed its non-State, protoplasmic nature.

That means each group that is linked to this fuzzy entity has a great autonomy to decide the way it will fight the "Jihad" according to a general guideline. A kind of franchising!

That implies we cannot seriously figure an action pattern with a certain amount of logic and predictability, like it used to be in the times of the Middle-Eastern terrorism in the 80's.

Today's terrorism has no centralized planning and figuring an operational scheme would be a pure guess, except based on reliable intelligence sources.

That means nothing clearly indicates that these terrorists would use NBC weapons despite what happened in the post 9/11 in the US. And with this case, if we don't know the authors neither the origins of the germs, we have realized the effects of such a disruptive action.

Anyway, on the basis of former experiences, we have to be proactive and figure how could some people use NBC weapons.

NBC terrorism is clearly a threat but it has technical limits: according to what we've just said, could such attacks be really set to generate massive destruction as a State could? We do not think so.

We reasonably can figure that terrorists would rather choose to create an "NBC Damocles effect" that would be more adequate to their capacities?

A- NBC terrorism, a "Damocles effect"?

Arguing about a definition of terrorism is useless and I would say basically that it's a criminal activity generating a situation of terror among people, using small – asymmetrical - means to achieve political goals.

The key words are, of course, "situation of terror".

When a Nation-State is the key actor, this situation of terror makes people frightened every morning.

When it's a terrorist group using an invisible threat, people are afraid of living. Everything is the vector of terror: the food you eat, the water you drink, the letters you receive even the air you breathe…

In March 1989, the most intensive food safety investigation in FDA history took place when a terrorist threatened to poison this nation’s fresh fruit supply, to focus attention on the living conditions of the lower classes in Chile. The terrorist made a convincing phone call to the FDA and two grapes were found laced with small amounts of cyanide.

Fortunately no one was poisoned, but the incident cost millions of dollars to investigate and had a significant impact on Chile’s national economy, where fruit and vegetable exports are second in importance only to copper.

A biological toxin could have been used just as easily as cyanide in this instance. The amounts of toxin needed to obtain the desired effect are exceedingly small. For example, about 30 grams of Ricine, easily concealed anywhere, would be sufficient to lethally poison one batch of 150 pounds of meat, enough to produce 1,500 hot dogs.

The threat is real and the knowledge required is not esoteric.

As with the attacks on the World Trade Centre and the Pentagon, the 2001 anthrax strikes have been conducted using simple, unconventional methods converting America's communications infrastructure into a delivery method for bio-agents. A few mailed letters have resulted in several thousand of false alarms and hoaxes tying up police, fire, medical and hazmat teams, stirring panic among the populace, interfering with mail delivery and worrying politicians and the military.

This kind of actions could easily be repeated in several places, with or without warning calls, with or without claims, allowing some deaths, then stop. And this could be randomly repeated in different ways, different places, with different products.

One can easily figure there is no need for large amounts of NBC products or a mass destruction of people to create a real panic.

Most asymmetrical! This kind of actions could really create a "Damocles Effect", with officials and people living in a permanent situation of terror and paralysis created by this deadly psy-war, fearing that anytime, as with the legend, the horsehair breaks.

B- What issues?

Consider the relatively small costs involved with NBC attacks and huge troubles caused: spending that generates for preventive measures - what we call in France the "principle of precaution"- spending is out of proportion. So, we have to be very careful.

Nevertheless, events of September 11 have created a need to assess our defence needs and ensure that the resources we spend for security are aligned with the most pressing security threats. The elements summarized here tend to prove that NBC threat is quite real, quite serious, and deserves a vigorous response of all kinds.

But I would like to make some remarks.

• The first one is about risk management. I think you will agree that our countries must be very careful about the traps that would come from any terrorism ant the time seems to create good opportunities. If it's too easy to create a costly disruption the ratio between expenses and risks will be inverse and at the end we'll be paralysed. Too much prevention may jeopardise our standards.

Even if we still can fly, that's already what almost happens with airline security.

Because someone had explosives in his shoes, we have now to take off our shoes at the airport control. Then, what else?

And if some letters were containing Anthrax germs in the US last fall, how many hoaxes have led many countries to take costly measures around mail services.

If we are completely paralysed, we are losers anyway.

So we must carefully manage the risk.

• That's why I will suggest a second remark.

Prevention is good. But it's only good when it's made very early, with an upstream perspective. That implies to accept reality and to acquire the necessary knowledge. It's not obvious.

To be clear, that means that war against terrorism – NBC terrorism too - must be based on intelligence, intelligence based actions - as long as they comply with our belief in human rights – and has to be proactive.

That could be part of the risk management.

But terrorist groups might still find a way to use NBC weapons as their goal is to terrorise or kill innocent people thus harassing our countries, even more likely, we know it today, as they have no regard for their own lives an that the chain of command is not straightforward.

So, we must face the brutal reality that no technological remedies can provide complete confidence that we are safe from NBC attacks.

Thus, couldn't we reasonably think that NBC terrorism could become the "ultimate terror"?

François Haut