

**WOULD TERRORISTS GO NUCLEAR?
MOTIVATION AND STRATEGY**

by

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Abstract

This thesis is an attempt to assess the likelihood that terrorist groups would use true nuclear weapons if they had them.

It is highly unlikely, although not altogether inconceivable, that terrorists could obtain a functional nuclear weapon unless they were directly state-supported. However, non-nuclear radiological dispersion or emission devices could be used.

A well-funded terrorist religious cult, such as Aum Shinrikyo, would pose the greatest risk of nuclear terrorism because it would not be constrained by law or conventional morality and would be undeterrable. The next most dangerous would be a religiously-motivated transnational group, such as al Qa'ida, which claims a divine mandate, has no fixed homeland, and has a small, dispersed constituency. National-revolutionary or separatist groups would be least likely to use nuclear weapons because their homelands are vulnerable to retaliation and they could be constrained by their constituencies. Right-wing and single issue groups are 'wild cards'.

Dedication

This thesis is dedicated to my exceedingly patient wife, Tess, to our wonderful young sons, Griffin and Alric, five and nearly three years old respectively at the time of writing, and to the memory of my mother, Barbara Joan Frost, who died within weeks of my beginning this degree. I hope they are all pleased – and not *too* startled – to see me finish an M.A.

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My grateful thanks also go to the many academics and practitioners in the broad field of security studies, too many to name individually, who made me feel as though I might have something to offer the discipline, attended my presentations, corresponded with me, and bought me the odd beer. In particular, I must thank the Canadian Association of Security and Intelligence Studies (CASIS) for sponsoring me to attend two of their outstanding annual conferences and for awarding me the 2004 graduate Weller Prize, and the Canadian Consortium for Asia-Pacific Security (CANCAPS) which likewise sponsored my attendance at two conferences, afforded me my first real academic speaking opportunity in lo these many years, and published my first peer-reviewed academic paper.

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Chapter 1: Introduction

Discussion about terrorist use of weapons of mass destruction (WMD) typically begins, and even more frequently ends, with essentially technical questions. Can terrorists obtain the necessary materials? Do they have the skills to make weapons out of them? Can they deploy them? And so forth. The underlying assumption often appears to be that any and all terrorists want WMD and, given the opportunity, would happily use them.

Some of the problems of this approach should already be obvious. First of all, ‘terrorists’ are far from homogeneous, despite the misleading current practice of treating ‘terrorism’¹ as though it were somehow a single distinguishable entity, rather than a tactic that a very wide range of actors including individuals, subnational or transnational groups, and states may choose from time to time to employ. Terrorists vary considerably in their political aims, their strategic and geopolitical situations, their technical capabilities, and their psychological and strategic motivations to use WMD or, for that matter, any other particular tactic, as has been shown by the recent history of terrorism.

In World War II all sides deliberately employed state terrorism; the Nazi atrocities need no recounting here, nor do those of the Japanese in China. However, it could be strongly argued that certain Allied tactics, such as the nocturnal carpet bombing of

¹ ‘Terrorism’ is notoriously difficult to define, and I do not pretend to have the solution to the longstanding debate surrounding its use. However, my use of the term will be conditioned in several ways. ‘Terrorism’ here refers primarily to a violent *tactic* that may be adopted in pursuit of a *strategy* by a given group. It is certainly not an ideology, and using terrorism need not define a group as ‘terrorist.’ Some groups, such as Chechen nationalists, employ a mix of tactics, some of which are readily categorised as guerilla warfare, whereas others are more clearly terrorism. However, I will sometimes describe groups and individuals as terrorists where terrorism is their chief or only tactic. This distinction implies, of course, that there are some objective criteria that distinguish terrorism from other military or quasi-military tactics. The deliberate targetting of non-combatants is probably the most important, whether or not it occurs in the context of warfare; furthermore, terrorist attacks do not advance conventional military goals such as the occupation of territory, the destruction of military assets, or the attrition of military personnel. Criteria based on the presumed intentions of the perpetrator, such as their ‘political’ motivation, are of limited use, although they can differentiate terrorism from criminal acts, where personal gain is the motive. All military action is, as Von Clausewitz pointed out, political. Nonetheless, the idea that terrorism is either intended to or has the effect of causing fear, panic, and demoralisation in the public at large is useful. It is common in some circles to reserve ‘terrorism’ for the acts of subnational or transnational actors; while my focus here is indeed upon such actors, I will not reserve the term exclusively for them. States can and all too often do commit terrorism.

German cities, the mass firebombing of a large number of Japanese cities, and, of course, the nuclear attacks on Hiroshima and Nagasaki were attacks of very questionable military utility that caused immense numbers of foreseeable civilian deaths and appeared to be intended to panic and demoralise populations, thereby placing pressure on their governments to surrender; terrorism, in other words.² In the case of the nuclear attacks on Japan, for example, it can reasonably be argued that the United States could have achieved its military aim, the surrender of Japan, without killing civilians in the hundreds of thousands by demonstrating the power of nuclear weapons on a military target, such as a Japanese-occupied island, or a sparsely-populated region of Japan's home territory. If a nuclear demonstration followed by an ultimatum did not secure surrender, then a subsequent nuclear attack on a city might have been less susceptible to the charge of terrorism.

In the 1960s, 70s, and 80s, Marxist revolutionary groups of various types bombed and assassinated; others hijacked aircraft. In the 1990s and early 2000s Palestinian nationalists made an art of the suicide bomb, while Chechen separatists took very large groups hostage in attacks planned and executed with remarkable precision. The religious cult, Aum Shinrikyo, was interested in all of the CBRN weapons – chemical, biological, radiological, and nuclear – and used or tried to use biological, biotoxic, and chemical weapons. And in 2001, of course, al Qaeda members turned airliners into missiles and perpetrated the most lethal and destructive acts of terror ever by nonstate actors. All of these, while clearly constituting terrorism, were different tactics, carried out in the context of different strategies, by very different actors.

Second, there is a similar tendency in political and popular discourse to lump all WMD together. Again, while they all have the theoretical ability to cause mass casualties, these weapons differ greatly from one another in almost every other possible respect. Building an indigenous nuclear weapons capability requires state-level resources invested over many years; even if terrorists were to obtain ready-made fissile materials – highly-

² Cf. Jessica Stern *The Ultimate Terrorists* (Cambridge, MA: Harvard University Press, 1999) p. 17, cited in Mark Burgess "Terrorism: The Problems of Definition" Center for Defense Information (CDI) August 1, 2003 (<http://www.cdi.org/program/issue/document.cfm?DocumentID=1564&IssueID=138&StartRow=1&ListRows=10&appendURL=&Orderby=DateLastUpdated&ProgramID=39&issueID=138>)

enriched uranium (HEU) or plutonium-239 – in sufficient quantity, building a functional nuclear weapon may well be beyond the abilities of any known terrorist group. On the other hand, radiological weapons³ can be very easy to build, depending on their type, and radioactive materials could be obtained relatively easily, but no radiological weapon would have anything like the destructive power or lethality of a true fission weapon. And so it goes for the biological, biotoxic, and chemical WMD. Each weapon has a unique set of characteristics that would affect its value for any given strategy or group. (We should emphasise the particular threat posed by biological agents, though. Depending on the agent used and whether or not it had been bioengineered, a biological attack could well be more lethal than a nuclear bombing.) Like terrorists, WMD are not interchangeable.

Space will not allow us to deal with both complexities – terrorists and WMD – simultaneously, so this thesis will concentrate on nuclear, and to a lesser extent radiological, weapons and attempt to analyse the risks that any nonstate subnational or transnational group might ‘go nuclear.’⁴ Given the state of the world today, there will naturally be some emphasis on international Jihadist extremists and the al Qa’ida network and on nationalists or separatists such as Hamas and Hezbollah in the Middle East and the Chechens in the Russian Federation – the usual contemporary suspects, in other words – but we will also be concerned with broadening the scope of potential nuclear terrorists to include groups, such as right-wing extremists and religious cults, that may have been somewhat neglected in the present concentration on Islamist terrorism.

The first chapter after this introduction is a summary overview of some of the technical issues involved in nuclear terrorism and includes a review of a representative recent book on the subject. The second chapter introduces the topic of terrorist psychology and motivation by dismissing the popular stereotype of terrorists as mentally disordered fanatics. It substitutes, instead, a picture of psychologically normal, rational actors (as rational as any other people, at any rate, which leaves considerable leeway) with comprehensible motivations making reasonably rational, if morally abhorrent,

³ See ‘RDD’ in glossary.

⁴ I have dealt with many of the technical issues elsewhere. Cf. Robin Frost “Nuclear Terrorism Post 9/11: Assessing the Risks” *Global Society*, Vol. 18 No. 4, October, 2004

strategic choices. It goes on to discuss the various types of terrorist groups and the varied strategic and psycho-social factors that might influence their decisions to go nuclear. The next chapter discusses nuclear deterrence in the context of potential nuclear terrorist groups. The final chapter before the conclusion is a detailed discussion of al Qa'ida and the risk that it would 'go nuclear'.

My conclusions rank terrorist groups in terms of the risk that each would be motivated to use nuclear weapons, independent of their technical capabilities and the chances of their actually obtaining any. The most dangerous would be an apocalyptic religious or cult group, such as the Aum Shinrikyo. The next most dangerous group would be a transnational religio-political organisation, so far uniquely exemplified by al Qa'ida. The last group type – national-revolutionary or secessionist militants – are considerably less likely to use weapons of mass destruction than either of the preceding two. Other organisations, such as single-issue terrorists and right-wing extremists, are 'wild cards'; while the chances of their using nuclear weapons are probably low, these groups are also little known and unpredictable.

Chapter 2: Nuclear Terrorism: An Overview⁵

Perhaps the most common conception of nuclear terrorism involves an image of the ruins of a major city in which thousands died from the effects of a nuclear device planted by terrorists. Fortunately, this is probably the least likely form of nuclear terrorism. Unfortunately, there are a number of other forms, all of which are considerably easier and safer for the perpetrators than the detonation of a full-fledged nuclear weapon.

When the Soviet Union collapsed in 1991, there was immediate, widespread concern about the fate of its nuclear arsenal, which was dispersed among at least 14 of the Soviet republics, and about security in the former USSR's huge nuclear military-industrial complex. For a time, Ukraine, Belarus and Kazakhstan existed in virtual anarchy, with no clarity as to how, and by whom, the weapons were to be controlled. They soon renounced their nuclear status, however, and returned their weapons to Russia.

The fear of uncontrolled weapons falling into the hands of terrorists then largely abated, although it was reawakened by the 1997 claim by former Russian Security Council chief General Alexander Lebed that he could account for only 48 of 100 backpack-sized nuclear weapons.⁶ This drew attention to the very poor, even haphazard, standards of control and accounting that prevailed in the Soviet Union and its successor, the Russian Federation. However, there has been no serious suggestion that the notorious 'suitcase nukes' have reached terrorists or other clandestine proliferators, if indeed some were actually missing. In any case, by now they would probably not be useable except as sources of fissile materials.

⁵ Much of this section was originally published as "Nuclear Terrorism: An Overview," *Strategic Datalink* no. 120, May, 2004, by the Canadian Institute of Strategic Studies (CISS) and is reproduced here by the kind permission of the Institute and the editor of the Datalink series, Mr. David Rudd. The Datalink is a condensed version of my paper "Nuclear Terrorism post 9/11: Assessing the Risks," *Global Society*, Vol. 18 No. 4., October, 2004.

⁶ Cf. Rensselaer W. Lee III, *Smuggling Armageddon: The Nuclear Black Market in the Former Soviet Union* (New York: St. Martin's Press, 1998) p. 125

First, the probability that any portable nuclear devices were lost prior to or after the breakup of the Soviet Union appears low... This does not mean that the threat does not exist, but rather that at this moment, it is probably not the most immediate threat to the home security of the United States or to U.S. armed forces abroad.

Second, even if any devices were lost, their effectiveness should be very low or maybe even non-existent, especially if the loss occurred during the period of the greatest risk, in the early 1990s. Without scheduled maintenance, these devices apparently can produce only minimal yield and eventually possibly no yield at all, and can only serve as a source of small amounts of weapons-grade fissile materials.⁷

Security in the former Soviet Union's (FSU) nuclear complex continues to be a pressing concern. As recently as 1995, 30 tonnes of separated plutonium⁸ were stored in an ordinary warehouse, 'secured' only with a padlock, at a facility at Mayak in Russia. To deal with these lapses, a number of joint US-Russian programs are attempting to address the two major nuclear security issues in the FSU: the physical security of nuclear weapons and radioactive materials, and the problem of the tens of thousands of unemployed or underemployed nuclear technicians, engineers and scientists in the formerly secret cities⁹ of the nuclear complex. Chief among them are the Nuclear Cities Initiative (NCI), Initiatives for Proliferation Prevention (IPP), and the International Science and Technology Center (ISTC). These programs have been notably unsuccessful, especially in their attempts to find alternative employment for former nuclear workers who might be tempted to sell their nuclear expertise, or even nuclear materials, to the highest bidders. This seems to be largely because the present Bush administration, like its predecessors, appears to see these programs as foreign-aid handouts to a former foe, and

⁷ Nikolai Sokov and William Potter "Suitcase Nukes": A Reassessment", Center for Nonproliferation Studies, Monterey Institute of International Studies, September 23, 2002 (<http://cns.miis.edu/pubs/week/020923.htm>)

⁸ This is an immense amount of plutonium. North Korea's total holdings of plutonium, by contrast, were estimated at about 24kg, or 0.02 of a tonne, in 2003. International Atomic Energy Agency (IAEA), cited in "North Korea: Nuclear Weapons Program", Federation of American Scientists, April 24, 2003 (<http://www.fas.org/nuke/guide/dprk/nuke>)

⁹ Sarov, Zarechnyy, Lesnoy, Novouralsk, Snezhinsk, Ozersk, Trekhgorny, Seversk, Zheleznogorsk, and Zelenogorsk.

not as investments in American and international security.¹⁰ In 2001, for instance, the Bush administration initially sought to cut funding for the NCI by nearly 75%.¹¹ The President later reversed his position and requested \$27 million, which the Congress substantially increased to \$42 million.¹²

Non-military radiation sources in the FSU are, or should be, an even more serious source of concern. During the Soviet era a large number of powerful radiation sources accumulated in various facilities and were either stored, thrown out, or sold in an uncontrolled fashion.¹³ A number of radioisotopic thermoelectric generators (commonly used in unmanned lighthouses) containing significant quantities of highly radioactive strontium-90 have allegedly been lost to any control or monitoring, or simply lost altogether.¹⁴

This state of affairs has heightened concerns over the smuggling of radioactive materials from the FSU. Fortunately, despite the dire predictions of the early 1990s, the expected flood of radiation across the FSU's newly porous borders has failed to materialize. There has certainly been smuggling, but the amounts and nature of the interdicted materials suggest that it amounts only to a trickle and that it is driven by the

¹⁰ Cf. Sharon S. Weiner "Preventing Nuclear Entrepreneurship in Russia's Nuclear Cities", *International Security* 27.2 (2002)

¹¹ "The administration favors reducing last year's already reduced budget of \$25 million to a request for only \$6.6 million. Experts within the program question whether this sum is sufficient to maintain operations in even one of the cities, let alone expand to new areas. While congressional supporters will try to restore the budget to this year's level, the lack of political support within the administration could threaten the very survival of the program." Jon B. Wolfstahl "Russia: Surveying the nuclear cities" *Bulletin of the Atomic Scientists* July/August 2001 Vol. 57, No. 04 p. 17 (http://www.thebulletin.org/article.php?art_ofn=ja01wolfsthal)

¹² Cf. Phillip C. Bleek "DOE Threat Reduction Funding Cut, Programs Reorganized" *Arms Control Today* December 2001 (http://www.armscontrol.org/act/2001_12/threatreddec01.asp)

¹³ Leonid Bolshov, Rafael Arutunyan and Oleg Pavlovsky, "Radiological Terrorism" in: Committee on Confronting Terrorism in Russia (Siegfried S. Hecker, Chair) *High Impact Terrorism: Proceedings of a Russian-American Workshop* (Washington: National Academy Press, 2002) p.141

¹⁴ The Norwegian Radiation Protection Authority (NRPA) says that there are "several hundred" of these along the Russian Arctic shoreline. "Due to insufficient regulations for control and physical protection of the sources, they are readily accessible to intruders and the general public. A number of attempted thefts in recent years have demonstrated that these highly radioactive materials may also be available to terrorists seeking to utilise them." Norwegian Radiation Protection Authority "Dismantling of RTGs on the Kola Peninsula" *NRPA Bulletin* 7-04, 25 March 2004, p. 1 (http://www.nrpa.no/dokumentarkiv/StralevernInfo7_2004.pdf)

supply side – typically, amateurish opportunists who steal radioactive material and only later try to find a buyer¹⁵ – with little demand from either organized crime¹⁶ or terrorist organizations.

The IAEA’s database on global trafficking in nuclear and radioactive sources contains 540 confirmed instances between 1993 and 2003, of which “182 incidents involved nuclear material, 335 incidents involved radioactive material other than nuclear material, and 23 incidents involved both nuclear and other radioactive materials”. These numbers may seem alarmingly large, but the IAEA points out that only 17 incidents involved weapons-useable highly enriched uranium (HEU) or plutonium. In the early 1990s, “quantities of a kilogram or more of HEU were seized in a few cases, and in one case about 0.3 kg of plutonium was seized,” but since 1995 no confirmed theft or seizure has involved more than one or two per cent of the amount required to make a nuclear weapon.¹⁷

Some of the concern with the FSU might be somewhat misplaced. Alan Kuperman has suggested that security in the West, especially around HEU in civilian hands, is such that “Osama bin Laden may soon have better luck shopping for nuclear bomb material in Western markets than in the former Soviet Union”.¹⁸

Even if terrorists could obtain enough fissile materials, opinions are divided as to whether they could build a true nuclear weapon - one that derived its explosive power

¹⁵ Cf. IAEA “Inadequate Control of the World’s Radioactive Sources” (http://www.iaea.or.at/worldatom/Press/Focus/RadSources/rads_factsheet.pdf); Gavin Cameron, *Nuclear Terrorism: A Threat Assessment for the 21st Century* (New York: St. Martin’s Press, 1999) pp. 5, 8; Rensselaer W. Lee III, *Smuggling Armageddon: The Nuclear Black Market in the Former Soviet Union* (New York: St. Martin’s Press, 1998) pp. 124-125

¹⁶ John Deutch, former CIA director, quoted in Lee, *Smuggling Armageddon*, *op. cit.*, p. 19

¹⁷ IAEA “Facts & Figures: Illicit Nuclear Trafficking Statistics: January 1993 - December 2003” (http://www.iaea.org/NewsCenter/Features/RadSources/Fact_Figures.html)

¹⁸ Alan J. Kuperman, “Loose Nukes of the West”, *Washington Post*, Wednesday, May 7, 2003, Page A31, reproduced on <http://www.nci.org/index.htm> (framed site, no specific page URLs)

from nuclear fission.¹⁹ There are at least four major sets of problems that terrorists would have to solve before they could set off an atomic bomb:

1. obtaining enough weapons-useable fissile material (HEU or plutonium),
2. designing the device,
3. fabricating it, and
4. delivering it to the target.

The first would seem to make the entire project almost impossible. It is well known that even states that have dedicated enormous resources to the endeavour - such as Iran, Libya, and North Korea - have had considerable difficulty assembling enough fissile material for even a few warheads, especially because they were obliged to do so clandestinely. While proliferant states are usually interested in developing indigenous capabilities to enrich uranium or extract plutonium from spent reactor fuel, it is difficult to imagine why they would not try to buy weapons-grade fissiles 'off the shelf,' perhaps from disaffected Russian scientists or technicians, especially if they intended to use their weapons as bargaining chips for aid and concessions from the West.²⁰ Even the nuclear black market developed by Pakistan's notorious Dr. Abdul Qadeer Khan, the 'father' of that country's nuclear program, appears to have distributed nuclear technology in the form of hardware and antiquated Chinese bomb designs, rather than fissile materials.²¹

¹⁹ As we will see, building a fission bomb is a very difficult process, so we will not even discuss the possibility of a terrorist fusion (thermonuclear) weapon.

²⁰ There would be political difficulties to this approach, of course. Instead of allowing the West to draw appropriate inferences from the evidence on the ground, such as enrichment or reprocessing plants, a 'quick and dirty' proliferator using smuggled fissiles would probably have to actually detonate a device to prove their capability, which might invite unacceptable military, economic, or political retaliation instead of a carefully negotiated settlement.

²¹ Cf. William J. Broad, David E. Sanger and Raymond Bonner "A Tale of Nuclear Proliferation: How Pakistani Built His Network" *New York Times*, February 12, 2004; Central Intelligence Agency (CIA) *Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 July Through 31 December 2003* (http://www.cia.gov/cia/reports/721_reports/july_dec2003.htm)

Nonetheless, it has been suggested that even powdered uranium oxide reactor fuel could be used in an improvised nuclear weapon.²² The amount required would be very large, even in a relatively efficient implosion device, while the amount required to ensure a nuclear yield from a gun-type bomb would make powder unusable for that purpose, unless a very specialized press were obtained.²³ As our brief review of nuclear smuggling showed, however, all the evidence suggests that fissile materials, when they are smuggled at all, are smuggled in tiny quantities, and that there is little to suggest that large amounts of reactor fuel have gone astray. There is, however, the troubling case of a 19.9% enriched uranium (low enriched uranium, or LEU) fuel element that was seized in Italy in 1998 from criminals trying to sell it, apparently to unnamed Middle Eastern countries. It is widely thought that it was one of two fuel assemblies that went missing in the 1970s from a TRIGA research reactor in the Congo that is still operating under extraordinarily poor security.²⁴

Many claim, correctly, that conceptual drawings for both types of fission devices have been in the public domain almost since the first bombs were detonated. However, these are a far cry from what is needed to build a bomb. J. Carson Mark *et al* claim, in an exceptionally thorough and persuasive paper, that the preparation of useable engineering plans would require many hours of labour by people with specialized skills in a number of different engineering, chemical, and physical disciplines. They say that “the necessary attributes [of the nuclear weapon construction team] would be quite distinct from the paramilitary capability most often supposed to typify terrorists.”²⁵ At the same time, though, we should remember that the standards of safety, reliability, efficiency, and so

²² J. Carson Mark, Theodore Taylor, Eugene Eyster, William Maraman, Jacob Wechsler “Can Terrorists Build Nuclear Weapons?” in Paul Leventhal and Yonah Alexander (eds.) *Preventing Nuclear Terrorism* (Lexington, MA/Toronto: Lexington Books, 1987). J. Carson Mark was with the Manhattan Project and was later head of the Los Alamos National Laboratories’ Theoretical (T) Division.

²³ J. Carson Mark *et al*, *ibid*.

²⁴ Cf. George Bunn and Matthew Bunn, “Reducing the Threat of Nuclear Theft and Sabotage”, paper delivered at International Atomic Energy Agency (IAEA) Symposium, October 30, 2001 (http://www.iaea.org/NewsCenter/Features/Nuclear_Terrorism/bunn02.pdf); Michela Wrong, “More Wreck than Reactor”, *Financial Times*, 21 August 1999, p. 8, abstracted by Nuclear Threat Initiative (NTI) (<http://www.nti.org/db/nistraff/1999/19990690.htm>); African Unification Front (AUF), untitled ‘technology’ page (<http://www.africanfront.com/technology3.php>),

²⁵ J. Carson Mark, *et al*, *ibid.*, pp. 58-59

forth required by terrorists would be very much lower than those set for professional bomb designers.²⁶

The construction facility itself might have to be built from scratch and then equipped with a fairly large amount of electrical, metalworking, and chemical equipment, as well as radiation shielding, all of which might be difficult to assemble without raising suspicion.²⁷ With regard to shielding, even would-be martyrs would have to stay alive long enough to complete the construction. (Not incidentally, it is probably fair to assume that a lingering death from radiation sickness or cancer would be much harder to sell to the older, skilled personnel who would be required than the quick, explosive trip to heaven that is offered to the discouraged youngsters who are the typical fodder for suicide missions.) At the same time, we should remember that fissile materials themselves are not particularly radioactive, especially when compared to medical isotopes or spent reactor fuel, although plutonium is an extremely dangerous substance if inhaled.

Whatever kind of nuclear weapon terrorists were able to build, assuming they had access to the materials and skills, it would almost certainly be very large, probably weighing a ton or more.²⁸ It is clearly within terrorists' abilities to deliver such large loads to their targets – consider Oklahoma City, the first World Trade Center attacks, and other large truck and car bombs – but it would require the weapon to be either assembled in the target state or shipped, probably in a container, from the country of origin. Security at many seaports is notoriously poor and what inspection there is is typically directed

²⁶ For example, there is the problem of pre-initiation or 'fizzle' that can result in dramatically lower nuclear yields, or none at all. See 'fizzle' in the glossary. For more on these and other technical matters, see Stanislav Rodionov "Could Terrorists Produce Low-Yield Nuclear Weapons?" in: Committee on Confronting Terrorism in Russia (Siegfried S. Hecker, Chair), *High Impact Terrorism: Proceedings of a Russian-American Workshop* (Washington: National Academy Press, 2002)

²⁷ Again, we are assuming that terrorists would be acting without state sponsorship. If they were sponsored, the case would legally, politically, and morally be one of clandestine proliferation and unconventional delivery *by a state*, rather than by the subnational or transnational actors we are considering here.

²⁸ Mark *et al*, *op. cit.*, p. 50

towards interdicting drugs, making it entirely possible to deliver a bomb directly to a major city.²⁹

True nuclear weapons, however, are probably the least of our worries, in that all the available evidence, limited, circumstantial, and possibly deliberately misleading though some of it might be, suggests that they represent the least probable threat, albeit one having the most serious possible consequences. Non-fissile radiation sources used in commercial, industrial, and medical facilities are particularly worrisome, if only because they are kept under significantly lower security than reactor fuels or military materials, and because they were created for the express purpose of generating intense ionising radiation.³⁰ The Center for Nonproliferation Studies (CNS) says that “tens of thousands” of the millions of commercial radiation sources worldwide “pose inherently high security risks because of their portability, dispersability, and higher levels of radioactivity”.³¹ In the United States, as many as 375 radiation sources became orphaned, or “lost to institutional control”, in a single year and only a little more half, on average, are ever recovered.³²

Despite the very real risks arising from the various kinds of ‘loose’ radioactive materials around the world, however, there has been remarkably little evidence that terrorists have or would use them. So far, there has been only one known terrorist incident involving radioactive materials: Chechen separatists placed an RDD containing an unknown amount of cesium-137³³ in a Moscow park in 1995. A Chechen rebel leader

²⁹ In Albert Einstein’s famous letter to Franklin Delano Roosevelt proposing the development of nuclear weapons, he said that “a single bomb of this type, carried by boat and exploded in a port, might very well destroy the whole port together with some of the surrounding territory”. (*cf.* facsimile of letter at <http://www.aip.org/history/einstein/ae43a.htm>)

³⁰ Bolshov, Arutunyan, and Pavlovsky, “Radiological Terrorism” *op. cit.*, p.141

³¹ Charles D. Ferguson, Tahseen Kazi, Judith Perera *Commercial Radioactive Sources: Surveying the Security Risks*, Occasional Paper No. 11, Centre for Nonproliferation Studies, Monterey Institute for International Studies, January 2003, p. 17 (<http://cns.miis.edu/pubs/opapers/op11/op11.pdf>)

³² Ferguson *et al.*, “Commercial Radioactive Sources”, p. v. The authors also point out that companies may be reluctant to admit to losing radiation sources, for obvious reasons, so these figures quite probably under-represent the truth.

³³ The whole device weighed around 30kg, although the mass of its cesium content is unknown.

alerted the media and the bomb was never detonated, so the entire incident amounted to a publicity stunt, albeit an extremely dangerous one.

Radiation dispersal devices are, as we have suggested, very much easier to build and deliver than true nuclear weapons. All one needs is a radiation source and a means of distributing the radiation. The first, as we have seen, may not be much of an obstacle to determined terrorists, and the second certainly is not. The stereotypical RDD is a home-made device, perhaps a pipe or fertilizer bomb incorporating radioactive material that would be powdered or vaporized by the blast. This could be extremely effective, but it is not the only, nor even necessarily the most effective way of spreading radiation. One could simply drop an unshielded radiation source, such as a cobalt-60 rod from a food irradiation facility, near a pedestrian bottleneck, an entrance to a subway station or stadium, perhaps, and allow people to irradiate themselves. It could remain in place for a considerable time, possibly irradiating and re-irradiating tens of thousands of people, before the victims became symptomatic and epidemiological techniques traced their radiation sickness to its source.

Cesium-137 would be an effective choice for RDDs designed to distribute radiation actively, rather than passively, as in the previous example. It is not particularly difficult to obtain, as it is used in medical devices and in oil prospecting and drilling. Chemically, it is one of the most reactive substances known. If distributed as a powder, perhaps by an aircraft or snow sanding truck, it would bond to concrete and other surfaces, rendering them all-but impossible to decontaminate. It also has a particular affinity for human muscle and is quickly and easily absorbed.

However, food irradiation rods (measuring about one foot in length and one inch in diameter) are probably the best overall candidates for use in RDDs. They are used in large numbers in the food processing industry. In 2002 the Federation of American Scientists (FAS) prepared a number of RDD scenarios for the US Senate Committee on Foreign Relations. One, involving the detonation of an RDD containing a single cobalt-60 rod in Manhattan, concluded that the contamination would be comparable to that caused by the Chernobyl reactor meltdown. “[A]n area of approximately one-thousand square kilometers, extending over three states, would be contaminated” and “[i]t would

be decades before the city was inhabitable again, and demolition might be necessary”.³⁴ These conclusions are somewhat controversial; the American Nuclear Regulatory Commission (NRC) took issue with certain of the conclusions, especially the claim that the worst contaminated areas would have to be condemned.

The next area of concern embraces the safety of nuclear reactors and the nuclear fuel cycle, from fabricating the fuel to the disposal of waste. Security issues stem from the fact that commercial power-generating reactors:

- Are not designed (or at least their operators not required by the NRC to design them) “for the specific purpose of protection against the effects of ... attacks and destructive acts, including sabotage, directed against the facility by an enemy of the United States, whether a foreign government or other person”³⁵;
- May be vulnerable to aircraft strikes such as those that destroyed the World Trade Centre, New York, in 2001;
- Are guarded by private-sector security firms employing individuals with limited and ambiguous powers, possibly sub-standard training and, typically, low rates of pay;
- Are often located close to major metropolitan centres;
- Are capable, in certain circumstances, of total ‘Chernobyl-style’ meltdown even after emergency shutdown;
- House large quantities of highly radioactive spent fuel under security that is typically significantly poorer than that around the reactor itself; and
- Are already the objects of fairly widespread public concern regarding their safety, even under normal operating conditions, which raises the amount of potential social disruption that any terrorist incident could cause.

Non-commercial (e.g. military and research) reactors have their own particular characteristics that would influence their suitability as terrorist targets:

³⁴ Dr Henry Kelley, testimony before Senate

³⁵ Nuclear Regulatory Commission, *NRC Regulations*, Part 50.13, “Attacks and destructive acts by enemies of the United States; and defense activities” (<http://www.nrc.gov/reading-rm/doc-collections/cfr/part050/part050-0013.html>)

- Regardless of their size or power, military and U.S. Department of Energy reactors are not required by the NRC or any other authority to have containment buildings, although some do;
- Low power research reactors on university campuses typically have no containment buildings and little or no security

Finally, we must remember that not all nuclear reactors are subject to regulatory regimes comparable to those applying in Europe or North America.

The typical nuclear power reactor appears, on superficial inspection, to be well-protected beneath its reinforced concrete containment building. However, many writers, including one writing ten years before the event,³⁶ have claimed that these buildings would not be proof against aircraft strikes of the kind that took down the World Trade Center. The NRC's Fact Sheet on Nuclear Security Enhancements Since Sept. 11, 2001 makes only passing reference to the possibility of aircraft strikes on reactors - a startling omission given the nature of the events referred to in its title.³⁷

The NRC's own glossary³⁸ defines containment buildings as "gastight", with no reference to physical strength. Of course, in order to be gastight against the worst possible incident - an explosion or meltdown - a containment building must necessarily be very robust. Nonetheless, the fact that some research and military reactors lack even this level of security is obviously cause for concern.

The NRC *Regulations* have been amended to require operators to provide for defence against armed attackers and four-wheel drive truck bombs³⁹. However, they do not specify how powerful the bomb might be, and the attackers are limited to automatic

³⁶ Alexander Yefremov, *The Atom Bomb on the Black Market*, (Moscow: Novosti Press Agency Publishing House, 1990), p. 31. See also Edwin Lyman, quoted in "Are Reactors Adequately Protected?" *Nuclear Control Institute* (<http://www.nci.org/>, framed site.)

³⁷ Nuclear Regulatory Commission (NRC) "Fact Sheet on Nuclear Security Enhancements Since Sept. 11, 2001", (<http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/security-enhancements.html>, viewed Augst 17, 2003)

³⁸ "A gastight shell or other enclosure around a nuclear reactor to confine fission products that otherwise might be released to the atmosphere in the event of an accident." (<http://www.nrc.gov/reading-rm/basic-ref/glossary/containment-structure.html>)

³⁹ NRC *Regulations*, 73.1(a)i

weapons, which ignores the very much greater risks posed by other portable weapons such as shoulder-fired anti-tank or anti-aircraft missiles.

Various observers are concerned about the level of training, equipment, and authority of the private security guards at commercial reactors. The Project on Government Oversight (POGO)⁴⁰ claims to have interviewed guards at 23% of the operating and one decommissioning nuclear power reactors, as well as a National Guardsman protecting the perimeter of a plant. It describes them as “Under-Manned, Under-Equipped, Under-Trained, Underpaid and Unsure about the Rules [caps in original].”⁴¹ Paul Leventhal of the NCI says in a similar vein that “[a]llowing the plants to continue operating with inadequate security, in some cases only tens of miles from major cities like New York, Philadelphia, Cleveland, Chicago, Charlotte and Los Angeles, is unconscionable. Millions of people are at risk in the event of a successful attack causing severe damage to the reactor core or spent fuel pool at these plants.”⁴²

Some of the following recommendations address issues that were not discussed in detail, but are nonetheless salient.

- The FSU’s decrepit military and civilian nuclear complex must be seen as a real and immediate threat to global security. Steps must be taken to support and extend the existing Russian-American initiatives and to develop new ones.
- Research reactors running on HEU and all HEU in civilian hands worldwide should be closely monitored. In many cases it may be necessary to either shut them down or convert them to run on other fuels in order to prevent unauthorized access to weapons-useable material.
- National ports of entry and international harbours and airports, in particular, must be equipped with systems capable of detecting even well-shielded radioactive materials.

⁴⁰ For more information on POGO, see their “About Us” page at <http://www.pogo.org/p/x/aboutus.html>

⁴¹ POGO.org, “Nuclear Power Plant Security: Voices from Inside the Fences”, (<http://www.pogo.org/p/environment/eo-020901-nukepowerb.html#guards>)

⁴² NCI press release quoting Paul Leventhal, NCI president “President Says Terrorists Had Diagrams Of Nuclear Power Plants; Nrc Must Move Now On Major Upgrade Of Security Against Attack” (<http://www.nci.org/>, framed site, specific URL not possible, viewed 11 June, 2003)

- The training and compensation of guards employed at civilian reactors must be improved to the extent that all sites can, at the barest minimum, adequately address the NRC’s “design basis threats” or DBTs.⁴³
- Consideration should be given to protecting reactors against aircraft strikes well beyond the measures mentioned in the NRC’s “Fact Sheet on Nuclear Security Enhancements Since Sept. 11, 2001”.
- In general, protecting nuclear reactors and the fuel cycle should be seen as a matter of national and international security and not as an unreasonable burden on private industry.
- Security around commercial, industrial, and medical radiation sources must be improved.
- All militant groups must be monitored for signs of active interest in nuclear terrorism. This monitoring should extend beyond the usual radical Islamist suspects to include domestic right/left-wing anti-government bodies and individuals, ‘eco-terrorists’, nationalist-separatists, and cultists of various sorts.

Some of these issues are being addressed by various governments and organisations. Nonetheless, it is clear that there are many possible avenues that terrorists wishing to ‘go nuclear’ could follow, and that preventing nuclear terrorism should involve a far more extensive, coordinated, and comprehensive strategy than has been the case thus far.

Nuclear Terrorism and the Temptations of Polemic – A Short Case Study

Even so eminent an authority as Graham Allison, the founding dean of the John F. Kennedy School of Government at Harvard and the director of the Belfer Center for Science and International Affairs, is not immune to the tendency to overstate the risks of nuclear terrorism. In a recent book on the subject,⁴⁴ Allison presents the most alarmist possible interpretation of the facts. Since my work is, to some extent, a reply to this and

⁴³ Nuclear Regulatory Commission, “NRC Regulations (10 CFR), Part 73 – Physical Protection of Plants and Materials” (<http://www.nrc.gov/reading-rm/doc-collections/cfr/part073/full-text.html>)

⁴⁴ Graham Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (New York: Times Books, 2004)

similar works, Allison's book will be dealt with in some detail here.⁴⁵ I will argue that he fails to understand the true nature of the known instances of nuclear theft and smuggling, appears to be ignorant of some of the technical issues involved in nuclear weapons design and construction, such as the masses of fissile materials required and the techniques and materials involved in miniaturisation, and in general exaggerates the risk of true nuclear terrorism, the detonation of nuclear explosives, relative to other, far more likely forms. However, his prescriptions for minimising the risk of nuclear terrorism, which focus on controlling radiation sources world wide and imposing an effective counterproliferation regime supported by guaranteed, affordable fuel-cycle services provided by developed nuclear states, are largely unimpeachable.

The introduction sets a rather alarmist tone, describing the effects of a ten kiloton nuclear explosion on various major American cities, and approvingly quotes such authorities on nuclear terrorism as the novelist Tom Clancy and the investor Warren Buffet. He also quotes rather more credible sources, such as retired four-star general Eugene Habiger, who ran nuclear anti-terrorism operations for the U.S. Department of Energy until 2001, as saying of nuclear terrorism that "it is not if, but when".⁴⁶ The book introduces the notoriously ambiguous case of the 'suitcase nukes' that were said, in 1997, to be missing from Russia's nuclear arsenal, and quotes Howard Baker, Ronald Reagan's chief of staff and a former Senate majority leader as saying "there could be 40,000 nuclear weapons, or maybe 80,000, in the former Soviet Union, poorly controlled and poorly stored."⁴⁷ Although Allison notes the subsequent Russian denials regarding the suitcases and apparently ignores the fairly well-known fact that Russian nuclear weapons use degradable components and therefore require frequent servicing to remain functional, the clear impression is left that any number of devices are still out there, fully

⁴⁵ Much of the following material on Allison's book is drawn from my forthcoming review article, "The Temptations of Polemic" *Survival*, Spring 2005, Vol. 47, No. 1.

⁴⁶ Eugene Habiger in Bill Keller "Nuclear Nightmares" *New York Times Magazine*, 26 May, 2002, quoted Allison, *op. cit.*, pp. 5-6

⁴⁷ Howard J. Baker Jr., cochair, Russia Task Force, "Department of Energy Nonproliferation Programs with Russia," Panel 1 of Hearing of the Senate Foreign Relations Committee, 28 March, 2001, quoted Allison, *op. cit.*, p. 9

functional and readily available to terrorists or rogues.⁴⁸ Having established a suitable level of fear in the audience, however, the book then takes another 137 pages before it concedes the “incredible fact” that “not a single former Soviet nuclear weapon has been found in another country or in an international arms bazaar.”⁴⁹

It also suggests, using some intriguing sources, such as a now-secret 1977 undergraduate science thesis,⁵⁰ that building a nuclear weapon would not be particularly difficult for a determined terrorist group. However, a close study of the technical issues, as provided by J. Carson Mark, the former head of Los Alamos’s T (theoretical) division in charge of weapons systems development, and other senior bomb designers and physicists shows that the hurdles to be overcome would be considerable, even for a crude gun-type device.⁵¹ Not least would be obtaining sufficient fissile materials: the simplest design using 94% enriched uranium (weapons-grade HEU) would require 52kg. It would be extremely difficult, if not impossible, for terrorists to obtain so much of this material, which is only used in weapons and some highly-specialised reactors. A design using 50% enriched uranium would require 160kg, while 800kg of 20% enriched uranium (the lowest grade of HEU) would be needed for a bomb. It would also be extremely difficult to obtain enough weapons-grade plutonium-239 – *vide* the cases of clandestine proliferants, such as North Korea, that have such trouble scraping enough together for a bomb or two – while the technical challenges involved in making a functional implosion device, the only kind that can be fuelled with plutonium, are more severe than those involved in gun-type weapons.

Although Allison lists some of the best-known instances of nuclear theft or smuggling, he does not make it clear that no known case has involved more than a tiny fraction of the amount of fissile material required to make a nuclear weapon, that many of

⁴⁸ Cf. Nikolai Sokov and William Potter “Suitcase Nukes”: A Reassessment” *op. cit.* See also ‘boosted fission,’ ‘fusile,’ and ‘fusion’ in the Glossary.

⁴⁹ Allison, *Nuclear Terrorism*, p. 146

⁵⁰ *Ibid*, pp. 87-89

⁵¹ J. Carson Mark, Theodore Taylor, Eugene Eyster, William Maraman, and Jacob Wechsler “Can Terrorists Build Nuclear Weapons?” reproduced by the Nuclear Control Institute (<http://www.nci.org/k-m/makeab.htm>)

the cases were actually the result of law enforcement ‘stings,’ nor that “the visible manifest market for nuclear materials appears disorganised, chaotic, dominated by bumbling amateurs, and artificial in important respects,”⁵² a conclusion supported by the International Atomic Energy Agency, which says “[t]he great majority of detected trafficking incidents appear to involve opportunists or unsophisticated criminals, motivated by the hope of profit.”⁵³

Allison also could be accused of paying too much attention to true nuclear terrorism, the use of bombs deriving their explosive power from nuclear fission, rather than to the vastly easier and correspondingly more likely other forms, although they are mentioned almost in passing. They are: radiation dispersal devices (RDDs or ‘dirty bombs’), radiation emission devices (REDs), and attacks on elements of the fuel cycle, especially nuclear reactors and waste storage pools. Any one of these would require very much less technical skill, specialised equipment, organisational support, manpower, and planning than even the crudest nuclear weapon, while powerful radiation sources are widely available in the industrial and medical sectors where they are frequently kept under little, if any, meaningful security. Although a ‘typical’ RDD might cause few if any immediate deaths, its effects on public morale and the economy could still be very severe, and there are certain sources, such as cobalt-60 food irradiation rods, that could be immensely destructive if used in an RDD.

While there are few, if any, outright errors or misstatements of fact in the first part of *Nuclear Terrorism*, the notion that its impressive data were deliberately presented so as to create the maximum fear and alarm is hard to avoid. However, the second part of the book, which provides policy prescriptions for preventing terrorist proliferation, is hard to fault. Even if the risk of terrorists going nuclear is indeed lower than Allison implies, the consequences would be so horrendous that it must be taken profoundly

⁵² Rensselaer W. Lee III, *Smuggling Armageddon: The Nuclear Black Market in the Former Soviet Union* (New York: St. Martin’s Press, 1998) pp. 124 – 125. See also Gavin Cameron, *Nuclear Terrorism: A Threat Assessment for the 21st Century* (New York: St. Martin’s Press, 1999) pp. 5, 8.

⁵³ International Atomic Energy Agency, (no author credited) “Inadequate Control of the World’s Radioactive Sources”, ([http:// www.iaea.org/NewsCenter/Features/RadSources/rads_factsheet.pdf](http://www.iaea.org/NewsCenter/Features/RadSources/rads_factsheet.pdf)) p. 3

seriously. And, as he says, minimising the risk would not even be particularly costly, especially by comparison with the war in Iraq or America's missile defence program.

Allison makes the simple, obvious, but all too often ignored point that without fissile materials nuclear terrorists cannot make bombs, and then takes the United States severely to task for its many failures to deal adequately with what its officials frequently describe as the most serious security threat facing that country. For example, he contrasts the less than one billion dollars requested for 2005 for the Nunn-Lugar Cooperative Threat Reduction Program, which attempts to secure nuclear weapons and materials in the FSU, with the \$87 billion in supplemental spending President Bush requested in 2003 for the war on Iraq, or the paltry \$127 million dedicated in the President's 2005 budget request to interdicting nuclear smuggling with the missile defence program's *ten billion dollar* budget. By almost any account, the risk of nuclear terrorism is much higher than that of a rogue state attacking the U.S. with nuclear missiles. As Allison says,

Total war on nuclear terrorism would cost \$5 billion a year, or perhaps even \$10 billion. In a current budget that devotes more than \$500 billion to defense and the war in Iraq, a penny of every dollar for what Bush calls "our highest priority" would not be excessive.⁵⁴

Allison pulls no punches, incidentally, in his assessment of recent American foreign policy, which he clearly sees as having increased, not decreased, the risks of terrorism of all forms:

When most of the world views the United States as unconstrained and unconstrainable; when half of the German population believes that the U.S. government is as great a threat to world peace as North Korea; when three times as many Pakistanis trust Osama bin Laden "to do the right thing regarding world affairs" than [sic] they do President Bush – the longer-term war on terrorism is clearly in trouble.⁵⁵

⁵⁴ p. 177

⁵⁵ p. 185

His prescriptions centre upon energetic multilateral efforts by a global grand alliance to prevent nuclear terrorism. It would work to enforce his Three Nos⁵⁶: No Loose Nukes, by requiring that all fissile materials be “cleaned out” from potentially insecure sites, such as research reactors, and then stored according to the “Gold Standard”, *a la* Fort Knox; No New Nascent Nukes, which would modify the Nuclear Nonproliferation Treaty (NPT) to prevent non-nuclear weapons member states from producing fissile materials and, as a quid pro quo, guarantee them fuel-cycle services at less than half their national cost, while also bolstering the NPT’s inspection and enforcement provisions; and No New Nuclear Weapons States, the logical outcome of the first two Nos, a principle that would draw “a bright line under today’s eight nuclear powers and [state] unambiguously: no more.”⁵⁷ Many of Allison’s detailed recommendations are targeted at the United States, both as the global hegemon and as the most likely target of nuclear terrorism. Throughout, he emphasises the need for the U.S. to turn away from its current bellicose unilateralism and embrace what George W. Bush himself once described approvingly as a “humble foreign policy”⁵⁸ to recover its shattered international standing.

⁵⁶ pp. 140 - 175

⁵⁷ p. 165

⁵⁸ President George W. Bush “The Second 2000 Gore-Bush Presidential Debate,” 11 October, 2000, quoted p. 182

Chapter 3: Terrorist Psychology and Motivation

The wide range of terrorist activity cannot be dismissed as “irrational” and hence as pathological, unreasonable, or inexplicable. The resort to terrorism need not be an aberration. It may be a reasonable and calculated response to circumstances.⁵⁹

Popular and political rhetoric is full of descriptions of terrorists as ‘sick’, ‘crazy’, ‘psychopathic’, or even ‘psychotic’.⁶⁰ This is a dangerously misleading notion that can seriously undermine our attempts to understand terrorist behaviour. Most terrorists are psychologically normal and as rational as most other people. Unfortunately, that terrorists do things that are abhorrent or incomprehensible to others says more about ordinary people than most of us are willing to admit, despite the overwhelming historical evidence that extreme violence, in the form of wars, genocide, murder, and rape, is part of the common human heritage.

There are a number of reasons for my claim about the normality, even the banality, of terrorists. First of all, there is objective evidence.

Whilst many [terrorists] are violent, and most have committed horrific and sometimes barbaric crimes, few if any fit the image in any technical sense of an abnormal individual. ... [M]ost active terrorists show few if any of the attributes of clinical abnormality. In a statistical sense, terrorists are not ‘normal,’ by virtue of the lives they lead and the things they do. But there seems [sic] to be no discernible psychopathological qualities of terrorists than can identify them in any clinical sense as different from others in the community from which they come.⁶¹

⁵⁹ Martha Crenshaw “The Strategic Logic of Terrorism” in Richard K. Betts (ed.) *Conflict after the Cold War: Arguments on Causes of War and Peace* 2nd Edn. (New York: Pearson Longman, 2004) p. 493 (ellipsis in original)

⁶⁰ Cf. No author credited “Psychotic murders: Savage kidnappers are holding all Iraq to ransom” *TimesOnline* (The Times of London) October 9, 2004 (<http://www.timesonline.co.uk/printFriendly/0,,1-41-1301013,00.html>)

⁶¹ Maxwell Taylor and Edith Quayle *Terrorist Lives* (London: Brassey’s, 1994) p. 13

Jerrold M. Post, a leading scholar of terrorist psychology, agrees.

The author's own comparative research on the psychology of terrorists does not reveal major psychopathology, and is in substantial agreement with the findings of Crenshaw that 'the outstanding common characteristic of terrorists is their normality'. Her studies of the National Liberation Front (FLN) in Nigeria in the 1950s found the members to be basically normal. Nor did Heskin find members of the Irish Republican Army (IRA) to be emotionally disturbed. In a review of the social psychology of terrorist groups, McCauley and Segal conclude that the best documented generalization is negative; terrorists do not show any striking psychopathology'. Nor does a comparative study reveal a particular psychological type, a particular personality constellation, a uniform terrorist mind. [punctuation as in original]⁶²

Second, there is the simple fact that seriously disturbed people, especially those suffering from psychosis, usually have great difficulty in simply doing the day-to-day things most of us take for granted – holding down a job, maintaining a household, staying healthy. Engaging in the demanding clandestine activities required by terrorism would simply be beyond the capabilities of most of them.

Third, people with serious mental illness could constitute grave dangers to 'professional' terrorist organisations. People with psychotic disorders, with their delusions, hallucinations, disordered thinking, unpredictable behaviour, and frequently incomprehensible speech, are unlikely to be anything but a impediment and a security risk to any terrorist organisation, in the extremely unlikely event that they were recruited in the first place. However, even people with less serious disorders, such as depression or bipolar disorder, could be lethargic and unmotivated in the first case and intermittently unpredictable and potentially uncontrollable in the second. Various personality disorders would make their sufferers unlikely to be loyal, reliable, and secure members of a terrorist organisation. In short, all of the factors that can make mental illness so disabling in the workplace and daily life would also be at play in terrorist organisations, a situation

⁶² Jerrold M. Post "Terrorist psycho-logic: terrorist behavior as a product of psychological forces" in Walter Reich (ed.) *Origins of Terrorism* (Baltimore: Johns Hopkins University Press, 1998) pp. 25-26

further complicated by the requirements for strict discipline, secrecy, and the ability to preserve a façade of normalcy while leading a double life.

Perhaps the popular beliefs about the ‘sickness’ of terrorists can be explained by popular ignorance of what truly constitutes mental illness, particularly psychosis, the most serious form of psychopathology. A psychosis can be defined as

... any of several major mental illnesses that can cause delusions, hallucinations, serious defects in judgment and insight, defects in the thinking process, and the inability to objectively evaluate reality. ... [I]n general, patients suffering from the recognized psychotic illnesses exhibit a disturbed sense of reality and a disorganization of personality that sets them apart from neurotics. Such patients also frequently believe that nothing is wrong with them, despite the palpable evidence to the contrary as evinced by their confused or bizarre behaviour. Psychotics may require hospitalization because they cannot take care of themselves or because they may constitute a danger to themselves or to others.⁶³

Psychotic people are out of touch with consensual reality. Not only do they have bizarre ideas, frequently involving such notions as personal divinity, unique spiritual or intellectual powers, or delusions of persecution or control by earthly or unearthly forces, their thinking is seriously disordered and their speech typically ignores the rules of logic and association that makes everyday conversation possible. A young woman close to me once asserted during a psychotic episode that she was immortal and could survive forever by eating the detritus of her own body, such as scabs and hangnails. Her beliefs were immune to any logical contradiction. Someone else, also close to me, believed that he ‘knew everything’, and that an extraordinary power of intuition allowed him to instantaneously derive an entire corpus of intellectual work by simply assimilating one or two of its key ideas, although he was quite incapable of actually demonstrating this ability. Indeed, when challenged this person would become mute due to the process known in psychiatry as ‘thought blocking’; at other times he could only ramble using a unique and largely unintelligible jargon of his own. A patient I met in a psychiatric hospital told me in detail of a visit he and other patients had paid to a circus, where tigers

⁶³ No author credited “Psychosis” *Encyclopaedia Britannica* CD-ROM Standard Edition 2004

had cut deep, neatly hexagonal wounds that nonetheless left no visible marks in their arms.

Clearly, frankly psychotic people could neither function in nor effectively lead a terrorist organisation. However, there are lesser forms of mental illness, such as the disorders formerly known as ‘neuroses’ and various personality disorders, that would not be so acutely disabling for those roles.

It is sometimes suggested that there is one personality type particularly suited to violent terrorism, the antisocial personality, formerly known as the psychopath, and, as we have noted, the epithet ‘psychopathic’ is often applied to terrorists and other violent criminals. It is true that many, but not all, people with antisocial personality disorder can be violent, sometimes extremely violent. It is also true, almost by definition, that people with the full-blown disorder have no conscience and feel no remorse for their actions. However, ‘psychopaths’ also have characteristics that could make them unsuitable for most terrorist organisations. They are exclusively selfish, with no prosocial impulses. They are deeply resistant to externally applied discipline or, to the extent that they do follow orders, they only do so under duress or for exactly as long as they perceive doing so to be in their immediate interests. Finally, they can be highly impulsive.

All of these traits make antisocial personalities risky partners in any sort of enterprise, especially one that requires secrecy, rigid discipline, long-term planning, the ability to cooperate with others, and the will and ability to endure privation and stress, with little or no prospect of personal reward, in the service of a cause. Nonetheless, people with less extreme forms of antisocial personality disorder – marked antisocial traits, in clinical terms – could be functional in terrorists groups. The violence and excitement would appeal, while their indifference to the feelings of others could make them valuable as ‘soldiers,’ the operatives who actually carry out terrorist actions. We should also point that people with antisocial personality disorders are not ‘crazy’ or ‘insane’ in any clinical sense. Indeed, they are more sane in some respects than many others; for example, they can be capable of very much more accurate observation and analysis than those of us whose perceptions are clouded by emotions. They also tend to have higher IQ scores than the average, although their relative inability to think and plan

over the longer-term or to anticipate the consequences of their actions is a kind of cognitive deficit.

This discussion obviously raises the question of criminal organisations, which have characteristics in common with terrorist groups, including their clandestine nature and sometimes rigid discipline, and which nonetheless accommodate disproportionately large numbers of antisocial personalities. The answer must lie in the groups' differing *raisons d'être*: while terrorists act in support of a cause, criminals act for personal gain. For a terrorist bomber, any rewards would be intangible and possibly fleeting, unless he or she were a mercenary, while the personal costs and risks of being a terrorist are high; the rewards of criminality, however, are typically immediate and tangible.

Indeed, the terrorist lifestyle would be difficult for almost anyone to follow:

The nature of the clandestine lives adopted by Red Brigades members, and the strict security structure in which the members lived, created great tensions. Lives were organised, social contacts were greatly diminished and controlled, and members lived in a self-created world far removed from the workers whom they claimed to represent. ... Adopting a clandestine lifestyle may be a pragmatic response to pursuit by the security forces. But such a lifestyle also has profound psychological consequences⁶⁴

Although most serious forms of psychopathology would disqualify their sufferers from working as terrorists, it is clear that some terrorists, especially terrorist leaders, have shown traits characteristic of various personality disorders. For example, there can be little doubt that the leaders of a number of groups have shown signs of narcissistic personality disorder.

The symptoms of narcissistic personality disorder revolve around a pattern of grandiosity, need for admiration, and sense of entitlement. Often individuals feel overly important and will exaggerate achievements and will accept, and often demand, praise and admiration despite worthy [sic – possibly *unworthy*?]

⁶⁴ Taylor and Quayle, *ibid*, p. 142

achievements. ... There is a sense of entitlement, of being more deserving than others based solely on their superiority.⁶⁵

Shoko Asahara, the former leader of the violent Japan-based Aum Shinrikyo cult, is a good example. “Ashahara [sic] (born Chizuo Matsumoto) had numerous exalted titles, including venerated master, yogi, and holy pope. ... Ashahara has, on many occasions, claimed to be the reincarnated Jesus Christ, as well as the first “enlightened one” since the Buddha.”⁶⁶ Asahara also had paranoid traits, with clear-cut delusions of persecution:

With the poison gas attacks that have continued since 1988, we are sprayed by helicopters and other aircraft wherever we go... The use of poison gases such as sarin were clearly indicated. The hour of my death has been foretold. The gas phenomenon has already happened. Perhaps the nuclear bomb will come next.⁶⁷

Many religious and cult leaders have had bizarre ideas and displayed peculiar behaviour, by the standards of their cultural mainstreams, but very few of them have turned to terrorism. In some cases their behaviour and beliefs may actually have been consciously, and cynically, adopted to attract and manipulate their followers. In any case, such personalities seem to be substantially less common among political terrorists. While they may employ methods that many or most in the mainstream society find abhorrent, the behaviour of most political terrorist leaders is both rational and clearly reality-orientated, within the contexts of their goals and beliefs. They have to maintain the

⁶⁵ Summarised from the *Diagnostic and Statistical Manual of the American Psychiatric Association, 4th Edition (DSM-IV)* by AllPsych Online (<http://allpsych.com/disorders/personality/narcissism.html>)

⁶⁶ Kyle B. Olson “Aum Shinrikyo: Once and Future Threat?” *Emerging Infectious Diseases*, vol. 5, no. 4, July/Aug. 1999 (reproduced by Centers for Disease Control (CDC) at <http://www.cdc.gov/ncidod/EID/vol5no4/olson.htm>)

⁶⁷ Shoko Asahara, speaking on April 27, 1994, quoted in “III – Background of the Cult,” *Global Proliferation of Weapons of Mass Destruction: A Case Study on the Aum Shinrikyo*, Senate Government Affairs Permanent Subcommittee on Investigations, October 31, 1995, Staff Statement (reproduced by the Federation of American Scientists (FAS) at http://www.fas.org/irp/congress/1995_rpt/aum/part03.htm)

support of a constituency beyond their group's active membership, and this would be difficult or impossible if their ideas were outlandish or their behaviour bizarre.

Osama bin Laden, the leader of al Qa'ida, has been alleged to have a personality disorder, or at least to show personality traits exaggerated to a pathological degree. Jerrold M. Post, who founded the CIA's centre for personality analysis,⁶⁸ has called him a "malignant narcissist" who "still thrives on being on center stage and wants to influence world events. ... Part of what he's been trying to do [by releasing statements and videos] is to keep up this tension, which magnifies his stature and accomplishes many of his goals."⁶⁹ Bruce Hoffman of the RAND Corporation concurs, saying "bin Laden has a certain sense of vanity and hubris in his mindset. He feels he has single-handedly changed the course of history, and to a certain extent, it's true. There's not many people who can say that."⁷⁰

My own view of the al Qa'ida leader is somewhat different, although it is based almost exclusively on the limited information provided by his public statements and actions. Bin Laden does not appear to want or encourage a personality cult, and his public speeches and writings are phrased in terms of a jihad by or on behalf of the greater Muslim community against infidel aggressors and corrupt Arab governments, and not in terms of himself as a particularly special, blessed, or gifted person. He also eschewed a life of very considerable wealth and ease to live in hiding, under constant stress and deprivation, in the service of his beliefs. (This is not to say that asceticism and malignant narcissism are necessarily incompatible, but asceticism in itself surely does not support the diagnosis.) If bin Laden is indeed narcissistic, his narcissism is of a quite different order than that of such prime examples as Shoko Asahara, Jim Jones, 'Emperor' Jean-Bedel Bokassa, Kim Jong Il and Kim Il Sung, and so forth.

⁶⁸ The Center for the Analysis of Personality and Political Behavior (CAPPB).

⁶⁹ Jerrold M. Post, paraphrased in Andrew Maykuth "bin Laden a 'malignant' personality who commands attention, CIA expert" *Philadelphia Inquirer*, November 10, 2004 (reproduced by Andrew Maykuth Online at <http://www.maykuth.com/stories/terror1110.htm>)

⁷⁰ Bruce Hoffman quoted *ibid.*

It should not be necessary to add this disclaimer, but here it is nonetheless: the foregoing should not be construed as supporting or condoning bin Laden, his beliefs, or his actions in any way. The point is simply that in order to deal appropriately with terrorists it is necessary to understand them as they are, and not as the demonised stereotypes that popular and political discourse apparently requires. That terrorists may be, and in fact frequently are, intelligent, psychologically healthy idealists only makes them more dangerous, not less.

At this point we might consider Post's claims about the nature of terrorism and terrorist groups in general. They are interesting but – to say the least – controversial. Post claims that terrorist violence itself, rather than the cause for which it is ostensibly employed, is or rapidly becomes the group's *raison d'etre*. He bases his claim on his belief that while they do not show any particular psychopathology, many terrorists are aggressive, stimulus-seeking, excitement-hungry, but socially and economically insignificant men with marked feelings of inadequacy.

[I do not] view political violence as instrumental, but as the end itself. *The cause is not the cause*. The cause, as codified in the group's ideology, according to this line of reasoning, becomes the rationale for the acts the terrorists are driven to commit. Indeed, the central argument of this position is that *individuals become terrorists in order to join terrorist groups and commit acts of terrorism*. [emphases in original]⁷¹

He also argues that success in terms of the terrorist group's stated goals would be the worst thing that could happen to almost any terrorist group, because that would remove its reason for being.

For any group or organization, the highest priority is survival. This is especially true for the terrorist group. To succeed in achieving its espoused cause would threaten the goal of survival. This fact suggests a position of cybernetic balance for the group. It must be successful enough in its terrorist acts and rhetoric of legitimation to

⁷¹ Jerrold M. Post, *ibid.*, p. 35

attract members and perpetuate itself, but it must not be so successful that it will succeed itself out of business.⁷²

Post's arguments, interesting and superficially plausible though they might be, remind us of the temptations and pitfalls of 'psychologising' behaviour. While it is obviously, and trivially, true that there are psychological roots to all human behaviour, to reduce all behaviour to psychology in this limited sense usually results, in short order, in *reductiones ad absurdum*. In other words, if one were to consistently apply Post's beliefs, one could see almost any group or institution as existing merely to serve its members' psychological needs, with its overt function taking a somewhat distant second place. If the highest priority for any group is survival and the service of its members' psyches, however, how are we to explain the many examples of groups that have cheerfully dissolved themselves when their goals were accomplished?

To use an example that directly addresses Post's arguments, the worldwide multitude of passionate and highly-organised anti-apartheid groups that, while usually not violent, must have provided some of the rewards of membership in terrorist groups, such as excitement, a sense of meaning, and a tight, ready-made social circle, did not all suddenly invoke new causes to sustain their existences when, partly because of their efforts, South Africa became a democracy in 1994. No doubt many of their erstwhile members continued to pursue social and political causes, but to reduce their motivations for doing so to petty psychological needs is profoundly anti-humanistic (and insulting). The same would apply to virtually any group. It is patently absurd to suggest that legislatures, for instance, exist to serve their members' needs for power, influence, and a rather qualified kind of prestige, although there is no doubt that some people seek election for those very reasons.

Terrorism and other forms of political violence arise in response to objective social, cultural, political, and economic conditions (although exactly what conditions, in what proportions and configuration, is properly contentious) and have more or less explicit political goals. To claim, *a la* Post, that groups such as Hamas, al Qa'ida or the

⁷² Jerrold M. Post, *ibid*, p. 36

IRA are, in effect, social clubs that exist solely to provide an outlet for their members' aggressive drives is simply risible.

If terrorists are not irrational psychotic or psychopathic killers, then, we must accept that their behaviour is guided by the same kinds of motivations and thought processes that drive our own, unpalatable though that notion might be. If we are to have any hope of understanding, predicting, and ultimately controlling terrorism, we must see terrorists as at least somewhat rational actors – as rational as the rest of us, in other words – who have goals and even ideals, who form and carry out strategies, who calculate costs and benefits, and who are responsive to internal and external incentives and constraints, whether they are psychological, social, cultural, political, financial, or technical.

Motivation and Constraints

Any terrorist group contemplating mass-casualty or mass-destruction terrorism, especially nuclear terrorism, does so within the context of a number of constraining or facilitating factors. Politically and strategically, they include the group's internal dynamics and leadership, its claimed or actual constituency, its relationship with its host state or states, the latter's and their own susceptibility to deterrent threats, their positions in the international system, the terrorists' target or targets, and the likely lethality or destructiveness of the contemplated attack. There are also psycho-social factors that might differentiate between groups that are otherwise similarly situated.

We must acknowledge at the outset the possibility that everything looks like a nuclear terrorist to us just because we are interested in nuclear terrorism. While this might be fair comment, to some extent, we must emphasise two points: first, we are discussing only the motivation – the strategic calculations and psycho-social capacity – involved in going nuclear regardless of the technical ability to do so and, second, we believe that popular and political discourse on the topic has been excessively narrowly focussed on transnational religiously-motivated terrorists – i.e. al Qa'ida and its Islamist affiliates – at the cost of ignoring the small but real risks arising from other groups. To the extent that this chapter is aimed at broadening that discussion it has a clear political intent. Finally, we must note that almost all discussion of nuclear terrorism in the open-

source universe is speculative. We know of almost no significant incidents of nuclear terrorism (even if we include radiological terror) and therefore, thankfully, we have no cases to study, while captive terrorists, especially those privy to high-level strategy and secrets, are not accessible to academics. Nonetheless, it is possible, with appropriate caveats, to outline the strategic situations of various groups and to draw some very broad conclusions.

The term nuclear terrorism will again refer to the use of true nuclear weapons, that is, those that rely on nuclear fission for their explosive effects, whether they be improvised nuclear devices (INDs) or weapons misappropriated from national stockpiles, except where otherwise indicated.⁷³

In many ways, nuclear terrorism is a special case of mass-casualty, mass-destruction, terrorism: while it is not at all clear for technical reasons that terrorist RDDs, in particular, would in fact cause either, the decision to ‘go nuclear’ would necessarily involve the intention to do so. In other words, the psychological step from deciding to engage in mass casualty terror to going nuclear is a much smaller one than that involved in deciding to engage in mass casualty terror in the first place.

This discussion will follow Jerrold Post’s typology, with some amendments. It lists social-revolutionary terrorism, nationalist-separatist terrorism, right-wing terrorism, religious extremist terrorism, subsuming both religious fundamentalist terrorism and terrorism perpetrated by non-traditional religious groups (such as Aum Shinrikyo), and single issue terrorism.⁷⁴

⁷³ In its broader usage, the nuclear terrorism refers to all three broad types of terrorism involving radioactive materials: the use of true nuclear weapons, the use of radiological dispersal or emission devices (RDDs, or ‘dirty bombs’, and REDs); and attacks upon nuclear reactors, waste dumps, and other elements of the nuclear fuel cycle.

⁷⁴ Jerrold M. Post ‘Differentiating the Threat of Radiological/Nuclear Terrorism: Motivations and Constraints’ Prepared for Presentation to Conference on Nuclear Terrorism, International Atomic Energy Administration, Vienna, Austria. November 2, 2001. (Provided by kind courtesy of the author. Page references are per the Microsoft®Word® original.) p. 3

Nationalists/Separatists

There is a fairly widely held belief that nationalist-separatist groups are constrained from mass-casualty terrorism, especially nuclear terrorism, by the “values of their base constituency,” the risks of an “an overwhelming international backlash,” and the hopes of gaining international support for their cause.⁷⁵ Militant separatists have traditionally attacked clearly identified elements of the ‘oppressor regime,’ such as military or police bases, national infrastructure, or government offices, rather than civilian targets, and they have frequently been careful to avoid, or at least minimize, civilian casualties.

Nationalist-separatist groups operating within their nation are particularly sensitive to the responses of their internal constituency, as well as their international audience. This provides a constraint against acts so violent or extra-normal as to offend their constituents....⁷⁶

Speaking of the Irish Republican Army (IRA), which killed approximately 1800 people, including 600 civilians, between 1969 and 1994, for example, Paul Arthur said

[The IRA] was always very, very conscious that it had to be careful how it used its violence. It is worth pointing out that Belfast, for example, never became Beirut. There was a control to most of the violence. Before the violence occurred, there were usually plenty of warnings. Very rarely could you put your finger and say that innocent people were targeted deliberately. They were very conscious in their propaganda of how they sold their violence. They were always conscious they had to bring their people with them.⁷⁷

To illustrate the risks of alienating core supporters, the Real IRA, an offshoot of the Irish Republican Army upset by the latter’s moves towards peace with the British,⁷⁸

⁷⁵ Charles D. Ferguson and William C. Potter, *The Four Faces of Nuclear Terrorism* (Monterey: Center for Nonproliferation Studies, 2004) p. 19

⁷⁶ Jerrold Post, ‘Differentiating the Threat’, *op. cit.*, p. 5

⁷⁷ Prof. Paul Arthur, University of Ulster and United States Institute of Peace, quoted on PBS Frontline: ‘The IRA and Sinn Fein’ (<http://www.pbs.org/wgbh/pages/frontline/shows/ira/conflict/>)

⁷⁸ The other is the Continuity IRA, or CIRA.

so outraged its constituency with its 1998 bombing of a shopping centre in Omagh, northern Ireland, that killed 28 and injured 200 that it ceased operations soon afterwards. As *Jane's Intelligence Review* said, "both Catholics and Protestants died together, helping to unite the two communities against the bombers."⁷⁹

However, there is nothing even in this argument to suggest that nationalist-separatist militants would or should be constrained from mass-casualty or nuclear attacks against state military or para-military targets, as opposed to civilian ones. (In this case, however, the action would probably be considered unconventional or guerilla warfare, rather than terrorism.) In any case, there are a number of examples of attacks against civilians that put the lie to the picture of idealistic separatist fighters, closely tied to a domestic constituency on whose behalf they claim to act, and following at least some of the rules of war. The most egregious would be the atrocity at Beslan in southern Russia in early September, 2004, in which at least 334 people, many or most of them children, died in the bloody ending of the siege of a school after a group of armed men and women, apparently Chechen separatists,⁸⁰ took more than 1100 people hostage. This was only the latest in a series of hijackings, bombings, and hostage-takings by various Chechen separatist groups that had threatened very large numbers of people. Prior to Beslan, they besieged a theatre in Moscow in October, 2002, and threatened to kill all 700-odd⁸¹ occupants. That they were forestalled by the Russian authorities, who themselves killed at least 170 people, including 129 hostages, in ending the siege does not diminish the Chechens' demonstrated will and ability to kill *en masse*. In Dagestan in 1995 militants under Chechen guerilla leader Shamil Basayev took an entire hospital and its 1500 inhabitants hostage. In that incident more than a hundred hostages died in two failed Russian assaults. Eventually, "having broken the Kremlin's nerve,"⁸² Basayev negotiated

⁷⁹ Sean Boyne 'The Real IRA: after Omagh, what now?' *Jane's Intelligence Review*, October 24, 1998 (http://www.janes.com/regional_news/europe/news/jir/jir980824_1_n.shtml) Cf also Jerrold Post, *op. cit.*, p. 5

⁸⁰ The attackers had apparently been demanding the release of Chechen militants taken prisoner in an earlier incident and the withdrawal of Russian forces from the territory.

⁸¹ Estimates of all the numbers involved in this incident vary somewhat.

⁸² C. J. Chivers 'The Chechen's Story: From Unrivaled Guerrilla Leader to the Terror of Russia' *New York Times*, September 15, 2004

with Prime Minister Viktor Chernomyrdin on live television and was granted free passage back to Chechnya.

With the Beslan incident, the attackers violated one of the few remaining taboos that have, until now, constrained many parties to armed conflict: that against deliberately targeting or harming children, or even putting them at risk.⁸³ In doing so they set a dreadful precedent for other terrorists, while the fact that they necessarily felt their purported constituency's feelings would be either supportive, neutral, or irrelevant is deeply disturbing.

Either the constraints mentioned by Post and others had no bearing on the Chechens' behaviour, or their claimed constituency's tolerance for violence was so broad as to have few or no real limits. It is possible, but by no means certain, that the former applies. Some observers claim that the tactics adopted by Chechen separatists have been squandering their political capital and alienating core supporters: "Once attentive to public images, both his own and that of his cause, Mr. Basayev and his adherents, at one time sympathetically regarded in many parts of the world as underdogs, now often evoke disgust."⁸⁴ It is not clear, however, how true this is within Chechnya itself, where at least 100,000 people died and more than 400,000 were forced to leave their homes during the wars with Russia in the 1990s.⁸⁵ These were merely the latest episodes in a history of conflict between an imperialist Russia and the peoples of the North Caucasus that date back to at least 1830, so it is possible that many Chechens would lay responsibility for the violence, including Basayev's tactics, at Russia's door.

⁸³ Unfortunately, this is not and has probably never been a universal taboo, even if it has applied in the Western tradition for the past few centuries. At any one time approximately 300,000 child soldiers are under arms with government, paramilitary, or opposition forces in at least 33 countries in Africa, South America, Europe, the Middle East, and Asia, as well as in a number of island states. Cf. Human Rights Watch 'Facts About Child Soldiers' (<http://hrw.org/campaigns/crp/facts.htm>); Amnesty International 'Child Soldiers' (<http://web.amnesty.org/pages/childsoldiers-index-eng>). And children are all too commonly victims of conflict: 'In ... internecine wars, vast numbers of children have been maimed, raped, or slaughtered in partisan conflicts. Many others have been displaced from their homes and separated from their families. Children have been recruited as Child Soldiers [sic] and exploited as cannon fodder.' (United Nations Office of the Special Representative of the Secretary General for Children and Armed Conflict 'Issues Overview' (<http://www.un.org/special-rep/children-armed-conflict/English/IssuesOverview.html>))

⁸⁴ C. J. Chivers, *op. cit.*

⁸⁵ No author credited, 'Chechnya', *Encyclopedia Britannica* Standard Edition 2004 CD-ROM

Sikh separatists have also been implicated in mass-casualty terrorism. At the time of writing two Indo-Canadian men, allegedly supporters one of several Sikh movements fighting for an independent 'Khalistan' homeland in India's Punjab, had been acquitted of charges of killing all 329 passengers on board Air India flight 182 and two baggage handlers at Narita Airport in Japan, all on June 22, 1985, in the worst incident of aviation terrorism before '9/11' and the worst mass murder in Canadian history.⁸⁶

Moral constraints aside, there are more pragmatic calculations that could influence separatists' decisions whether or not to engage in mass-casualty or nuclear terrorism. Secessionist territories are, by definition, within the target state's legal boundaries, and in many cases, target and constituency populations are intermingled. Israeli and Palestinian or Israeli Arab populations, for example, are either intermingled or, where separated, are so close to one another at many points that a WMD attack on one would be very likely to affect the other and therefore, presumably, invoke the nationalist/separatist constraint against killing fellow nationals or co-ethnics. In the case of nuclear weapons, the fallout plume from an explosion in any of Israel's major cities could easily penetrate the West Bank if a sea wind were blowing. Other WMD are similarly indiscriminate. Any release of a biological agent in an Israeli city, for example, would be certain to affect Palestinians or Israeli Arabs.

The situation in Chechnya, however, is such that extremists among the secessionist forces might consider using WMD against Russia. Russian president Vladimir Putin has been taking a hard line against Chechnya and Russian conduct of the war has been particularly brutal (although the Chechens have not been blameless):

Violations of international humanitarian law and human rights committed by Russian forces occurred [sic] on a much larger scale than those of the Chechen separatists. Russian forces engaged in the indiscriminate and disproportionate use of force, resulting in numerous civilian deaths. They also prevented civilians from

⁸⁶ At least 25 000 people are thought to have died in political violence in Punjab Between 1982 and 1995, and between 20,000 and 45,000 either 'disappeared' or were illegally detained. However, during that period Punjab was essentially in a state of civil war, so it is difficult to know how many deaths in that area could be attributed to Sikh mass casualty terrorism, Indian state action, including state terrorism, or outright warfare. Cf. Gurharpal Singh, 'Punjab Since 1984: Disorder, Order, and Legitimacy' Asian Survey vol. 36, no. 4, April, 1996, p. 411

evacuating from areas of imminent danger and humanitarian organizations from assisting civilians in need. Security forces were also responsible for disappearances in Chechnya.⁸⁷

Hundreds of thousands of Chechens have been killed or rendered homeless in the long campaign.⁸⁸ Grozny, Chechnya's capital city, has itself been virtually reduced to rubble by Russian carpet bombing. At the same time, there is no realistic prospect of a negotiated settlement anywhere in the short to medium term because of Chechnya's strategic location on Russia's southern flank, its proximity to the oil fields of the Caspian Sea basin, and Russia's unwillingness to permit secession for fear of establishing an example to be followed by any of the many other nationalities within the Federation. If extremist Chechen rebels felt that under these circumstances only a dramatic blow against Russia would force it to disengage, they might choose to use WMD of some sort, possibly nuclear, if they were within their capability.

Furthermore, the Russian and Chechen territories and populations are substantially distinct, especially in Moscow, which is in turn a very long way from Grozny. A WMD attack on the heart of the Russian state would entail no direct risks of injuring Chechens in significant numbers or of affecting Chechnya itself. If Chechen leaders' calculations extended no further than the attack itself, their inclination to use WMD would have to be rated as very much higher than those of the Palestinians.

In both the Palestinian and Chechen cases, however, would-be WMD terrorists would have to consider the threat of massive retaliation. Not only is Israel an undeclared – but unambiguous – nuclear weapons state, it is justly notorious for wreaking disproportionate vengeance on Palestinians for even moderate attacks against it, which

⁸⁷ No author credited, "First Chechnya War - 1994-1996" GlobalSecurity.org (<http://www.globalsecurity.org/military/world/war/chechnya1.htm>)

⁸⁸ "Estimates vary of the total number of casualties caused by the war. Russian Interior Minister Kulikov claimed that fewer than 20,000 civilians were killed while then-Secretary of the National Security Council Aleksandr Lebed asserted that 80,000 to 100,000 had been killed and 240,000 had been injured. Chechen spokesmen claim that the true numbers are even higher. Human rights groups estimate that over 4,300 soldiers from the federal forces were killed. In addition international organizations estimate that up to 500,000 people have fled Chechnya during the war." No author credited, "Russian Withdrawl[sic]" GlobalSecurity.org (<http://www.globalsecurity.org/military/world/war/chechnya1-1.htm>)

might deter any sane Palestinian.⁸⁹ In the Chechen case, Moscow has repeatedly demonstrated that it is willing to use disproportionate force in dealing with domestic security threats of all sorts. A nuclear attack by Chechen nationalists would provide a pretext, one that Russia might be prepared to defend before the court of international opinion, for responding in kind and solving the Chechnya problem once and for all. Indeed, even a nuclear threat, backed perhaps by a demonstration detonation, might literally backfire upon the Chechens if Moscow discounted the possibility that they actually had more than one bomb – called their bluff, in other words – and annihilated Chechnya. Even for Chechen nationalists, then, while there are some factors that increase the likelihood of nuclear terrorism, a sober calculation of the risks and benefits involved should show what an exceptionally risky tactic it could be.

It is possible, however, that desperation or ideology might drive some organisations, especially those influenced by religious beliefs, beyond these rational calculations. Gary Ackerman and Laura Snyder claim that “[t]he more fanatic beliefs of [Islamist Palestinian] groups help make them psychologically capable of inflicting mass casualties. If the current conflict worsens and a sense of desperation sets in, individuals may become less rational. Existing shackles on their desire to use WMD – such as concerns about Palestinian casualties and popular support – may begin to fall away.”⁹⁰

⁸⁹ An Israeli research institute says that the raw statistics for September 2000 to 29 August, 2003, stood at a total of 603 Israelis killed, compared to 1596 Palestinians. It claims, however, that “Israeli fatalities in the al-Aqsa conflict have consisted of 80 percent noncombatants (and over 80 percent before the substantial IDF [Israeli Defence Forces] casualties suffered during the Jenin incursion of April 2002), Palestinian fatalities have consisted of more combatants than noncombatants.” Don Radlauer “An Engineered Tragedy: Statistical Analysis of Casualties in the Palestinian - Israeli Conflict, September 2000 - September 2002,” International Policy Institute for Counter-Terrorism, June 24, 2002, updated September 29, 2004 (<http://www.ict.org.il/articles/articledet.cfm?articleid=439>). Human Rights Watch, meanwhile, wrote in its *World Report 2005* that “[a]rmed attacks and clashes in the course of [2004] brought casualties since September 2000 to well over three thousand Palestinians and nearly one thousand Israelis killed, and more than 34,000 Palestinians and six thousand Israelis injured. Most of those killed and injured were civilians.” Human Rights Watch “Israel/Occupied Palestinian Territories,” *World Report 2005* (New York/Washington, DC: Human Rights Watch, 2005) p. 473. In both sets of figures the ratio of roughly three Palestinian deaths for every one Israeli killed in the conflict is constant, while the ratio of injuries appears to be around five or six to one.

⁹⁰ Gary Ackerman & Laura Snyder ‘Would They If They Could?’ *Bulletin of the Atomic Scientists*, May/June 2002 (<http://www.thebulletin.org/issues/2002/mj02/mj02ackerman.html>)

Furthermore, the special properties of nuclear weapons might lead nationalists or separatists to seek them to use as bargaining or blackmail tools or to give them ‘state-like’ attributes, if only in the eyes of their constituents. For example, it is easy to imagine an upwelling of nationalist pride in certain Chechen circles if – ignoring the technical and logistical problems for the nonce – the Moscow theatre attackers had set up an IND rather than the conventional explosives they actually used.

It is interesting to speculate how, and to what degree, Russian, Chechen, and international conduct and reaction would have differed in these circumstances. The Russians would have found themselves in an extraordinarily difficult situation, especially if the bomb were fitted with a dead-man’s switch.⁹¹ On the one hand, the Russian forces could not have risked a direct assault or the use of gas but, on the other, they would surely not have been inclined to negotiate substantive issues regarding the status of Chechnya. They might have decided on a long-term siege, hoping to wear out the hostage-takers and even, perhaps, allowed for the possibility that the Chechens would eventually have detonated the bomb, in the hope that the rebels would thereby have discredited themselves in the eyes of the world and their own followers. Of course, the Russian authorities would then have faced very serious political fallout of their own, not only for having failed to save the lives of their own citizens but also for having permitted the Chechens to set an extremely dangerous precedent. Their conduct of the Moscow and Beslan incidents has shown, however, that the Russians, like the Chechens, have not been overly sensitive to international reaction nor loath to kill in large numbers.

In general there is some reason to believe that national-separatists would not be first in line to use weapons of mass destruction, especially nuclear or radiological ones, despite the growing lethality of the tactics of some groups and the precedents they have set. In many cases, separatist violence remains substantially ‘public relations by other means;’ an attempt, however misguided or ineffectual, to gain publicity and international sympathy for their cause, to encourage supporters, to pressure governments into

⁹¹ As an aside, it is surprising that the Chechens apparently did not rig their bombs thus in the actual incident, although those at Beslan were equipped with foot-operated dead-man’s switches, possibly as a result of learning from the Moscow case.

acknowledging their existence, to raise the costs of repression and, eventually, to force negotiations for a settlement. Given these goals, using a nuclear weapon for political leverage by threat and blackmail could be counter-productive. Detonating one would certainly would be. Let us hope that potential nuclear terrorists agree.

Social-Revolutionaries

Social-revolutionary groups, whether on the left or right of the political spectrum, are founded, by definition, on a belief that the entire political and economic structure of a given state, and more usually the entire world, must be destroyed in order that a better one might be erected. To the extent that they are genuinely revolutionary, it might seem that the constraints against mass casualty terrorism operating on them would be low, but Jerrold Post argues that they operate under some of the same constraints that influence separatists: “they would be significantly constrained from indiscriminate acts that cause significant casualties among their own countrymen, or cause negative reactions in their domestic and international audiences. But discriminate acts against government or symbolic capitalist targets could be rationalized by these groups.”⁹²

There are problems with this argument, however. The nature of revolutionary ideologies and their typical practitioners could quite easily permit or encourage terrorism on a massive scale under the right circumstances, even if the actors were claiming to act on behalf of a larger constituency such as ‘the working class.’ Revolutionary ideologies: first, allow the core group to see itself as a tiny, embattled, but chosen elite, custodians and implementers of a truth denied to almost all others; second, are ultimately global and all-inclusive, rather than limited to a particular state or territory; and third, allow almost any individuals or groups to be designated as enemy collaborators or fellow-travellers, or simply as expendable in the struggle for a greater good. Finally, the leaders of revolutionary groups are often markedly paranoid and/or have narcissistic traits or disorders, with grandiose beliefs about themselves, their mission, and the ultimate rightness of their cause. It would be a mistake, therefore, to assume that they would

⁹² Jerrold M. Post, ‘Differentiating the Threat’, *op. cit.*, p.5

necessarily make the same strategic and political calculations that rational nationalist separatists might (not that all separatists are necessarily rational, of course). If international capitalism were the enemy, for example, a revolutionary group might have no particular problems with blowing up Manhattan, Zurich, or London; if the enemy were ZOG,⁹³ then Washington would be an obligatory target.

The very absence, at the moment, of significant international support for revolutionary movements might actually encourage nuclear terrorism: if there are no state supporters to alienate, then that potential constraint is void. Similarly, revolutionary groups might be tiny, with few or no attachments to particular people, communities, or places, and therefore no particular constituencies to which to respond. Under these circumstances, the decision to go nuclear would seem, on the whole, to be more technical – Can we build one? Will it work? Can it be concealed and delivered? – than ideological or humanitarian, while the massive social, economic, and symbolic effects of a nuclear explosion would be extremely attractive, especially when they could be seen as hastening the collapse of an immoral system. Would Timothy McVeigh, for example, have been constrained by purely rational moral or strategic calculations, as opposed to technical ones, from using an IND or RDD instead of a fertilizer bomb?⁹⁴

Right-Wing Terrorism

Which leads us to consider revolutionary right-wing terrorism. This is a topic that has been given a rather low profile since the events of September 11, 2001, and the consequent focus on trans-national Islamist terror but, as we hinted above, there are risks that nuclear terrorism might arise from the right-wing underground, especially, perhaps,

⁹³ The Zionist Occupation Government, an imaginary Jewish organisation alleged by some white supremacists and others on the extreme right in North America to have taken behind-the-scenes control of the U.S. government.

⁹⁴ As it happens, “[t]here is no evidence indicating that Timothy McVeigh ever considered unconventional weapons to inflict mass casualties. Even though McVeigh donned protective gear during his service in the Gulf War and the Oklahoma City bombing occurred a month after the Tokyo subway attack, he never showed any interest in weapons material that could potentially inflict larger casualties than conventional explosives. Explosives were his weapons material of choice. He had extensive knowledge and experience with explosives and that fulfilled the objectives he envisioned for his attack.” At the same time, it does not appear that purely moral considerations influenced his choice. John V. Parachini “Comparing Motives and Outcomes of Mass Casualty Terrorism Involving Conventional and Unconventional Weapons” *Studies in Conflict & Terrorism*, 24, 2001, p. 393

from some of the cult-like forms sometimes found in North America. As Richard Falkenrath *et al* point out, “[t]he problem of right-wing violence, while by no means new, appears to have grown worse since the mid-1980s. Internationally, an escalation in right-wing violence and fringe political agitation has been seen in England, Germany, France, Israel, Russia, and several other states of the former Soviet Union, manifested most often in racially motivated attacks on foreign residents.”⁹⁵ As the authors say, McVeigh’s bombing of the Alfred P. Murrah building in Oklahoma City meant that “the precedent for massively destructive domestic terrorism has been set.”⁹⁶ It is also significant that this extremely destructive act was carried out by just two people with no real organisational affiliations or external support.

With that notable exception, however, most right-wing violence so far has been little more than simple thuggery on a slightly larger scale; generally uncoordinated, ill-planned and executed, and causing limited casualties or damage, although the terrorising of black and other ‘non-white’ Americans, including Jews and Hispanics, by white hate groups has resulted in scores or hundreds of deaths. The targets have frequently been individual members of racial minorities or symbolic structures, such as religious buildings or ethnic cemeteries. Most of these incidents have been classified as hate crimes, rather than terrorism, because there is little evidence of co-ordination or an explicit political program.

Although it has not done a great deal more than talk and posture, there is, however, another side to right-wing violence in North America, a side that is explicitly anti-government and implicitly or explicitly revolutionary. It is manifested in elements or aspects of the militia, Christian Identity, ‘freemen’, ‘common law’, and ‘patriot’ movements, and their ilk, although it would be inaccurate to suggest that all of these movements or their members have identical views. Nonetheless, this admittedly rather heterogeneous group does give currency to a number of ideas that could legitimize

⁹⁵ Richard A. Falkenrath, Robert D. Newman, and Bradley A. Thayer *America’s Achilles’ Heel : Nuclear, Biological, and Chemical Terrorism and Covert Attack*, BCSIA Studies in International Security (Cambridge, Mass: MIT Press, 1998) p. 194

⁹⁶ *Ibid.*, p. 195

terrorism. Some are radically libertarian or anarchic, such as the belief that the U.S. federal government, like all governments, in some formulations, is intrinsically illegitimate; that no government has a right to levy taxes; that no government may control gun ownership, and so forth. Some groups favour conspiracy theories: a popular example is the notion that the federal government has been taken over by a clandestine Jewish cabal and should therefore be known as the Zionist Occupation Government, or ZOG. As the reference to ZOG suggests, there is also a broad strain of racism and anti-semitism, frequently supported by reference to Biblical verses, running through many of the movements on the far right. Others fear the alleged 'internationalist' tendencies of the U.S. government and suspect it of collaborating with others to establish a toxic New World Order. In some cases, these beliefs add up to a position that is sufficiently well elaborated to be called a revolutionary ideology.

Despite right-wing extremists' relatively limited history of terrorism, it might take very little, perhaps just action plans to match the visions of some of the leaders and members of these groups, to vault them into the mass-casualty, mass-destruction league, or at least into its 'wannabe' ranks. For such people the symbolic qualities of nuclear or radiological weapons could be immensely attractive, gratifyingly confirming their own importance while placing them instantly on a par, at least in their own eyes, with their governmental enemies. Radiological terrorism might be especially attractive, as it requires relatively low levels of technical skill and equipment.

Hallelu-Yahweh! May the WAR be started! DEATH to His enemies, may the World Trade Center BURN TO THE GROUND!... We can blame no others than ourselves for our problems due to the fact that we allow...Satan children, called jews [sic] today, to have dominion over our lives My suggestion to all brethren, if we are left alone, sit back and watch the death throws [sic] of this Babylonian beast system and later we can get involved in clean up operations. If this beast system looks to us to plunder, arrest and fill their detention camps with, then by all means fight force with force and leave not a man standing.
– 'Pastor' August B. Kries III, Sheriff's Posse Comitatus⁹⁷

⁹⁷ Quoted in Daniel Levitas 'The Radical Right After 9/11' *Nation*, Vol. 275, Issue 4, July 22, 2002, p. 19

Religious Terrorism

It is not so much that religion has become politicized, but that politics have become religionized. Wordly struggles have been lifted onto the high proscenium of sacred battle.⁹⁸

It is hardly necessary to emphasise the importance of religio-political terrorism today. Indeed, it is widely thought that religious extremist terrorists have the greatest potential for mass-casualty terrorism because they lack many of the political and psychological constraints that might bear upon other groups. In the 1970s and 1980s most terrorism was carried out by either nationalist separatists or social revolutionaries who would regularly claim responsibility for their acts in their attempts to call attention to their cause and influence various publics or policy makers. In recent years, however, “upwards of 40%” of terrorist incidents go without claims of responsibility and, as Jerrold Post argues, this is because:

[Islamist militants] are not trying to influence the West. Rather the radical Islamist terrorists are trying to expel the secular modernizing West. And they do not need their name identified in a *New York Times* headline or on a story on CNN. They are ‘killing in the name of God’ and don’t need official notice; after all, God knows. ... These groups are accordingly particularly dangerous, for they are not constrained by Western reaction, indeed often wish [sic] to expel secular modernizing influences. They have shown a willingness to perpetrate acts of mass casualty terrorism....⁹⁹

On the other hand, Post and other observers might be somewhat over-interpreting al Qa’ida’s silence. A purported al Qa’ida member said in 2001 that “Al Qaeda’s code forbade its membership from publicly identifying its organisation or claiming credit for its attacks: ‘By claiming credit, we were told that the group will earn the wrath of the

⁹⁸ Mark Juergensmeyer ‘The Religious Roots of Contemporary Terrorism’ in Charles W. Kegley, Jr. (ed), *The New Global Terrorism: Characteristics, Causes, Controls* (Upper Saddle River, NJ: Prentice-Hall, 2003) p. 186

⁹⁹ Post, ‘Differentiating the Threat,’ *ibid.*

target state. Everyone knows that we were behind it and responsible for that action. Why claim credit and become identified and hunted down?”¹⁰⁰

Bruce Hoffman, meanwhile, says that “terrorism motivated either in whole or in part by a religious imperative, where violence is regarded by its practitioners as a divine duty or sacramental act, embraces markedly different means of legitimization and justification than that committed by secular terrorists; and these distinguishing features lead, in turn, to yet greater bloodshed and destruction.”¹⁰¹ In a similar vein, Gary Ackerman and Laura Snyder say that “[e]xtreme Islamist groups view the world through a radical lens, interpreting their religion as encouraging the use of any means possible to destroy ‘the Infidel’”.¹⁰² As just one illustration, in 1998 Osama bin Laden and his associates in the ‘World Islamic Front’ issued their well-known *fatwa*¹⁰³ calling for “every Muslim who can do it in any country in which it is possible to do it” to kill Americans and their allies, both civilian and military, a call they justified by reference to a number of verses from the Koran.¹⁰⁴

Ayla Schbley has developed an interesting empirical “causal and anthological profile” of Hezbollah *istishhadeen*, ‘voluntary martyrs’ or suicide bombers. As she remarks, “[a]lthough this Lebanese Shi’i religious terrorist profile is deduced from sectarian-specific psychometric measures that are the by-product of not only religion but also culture and history, it may also be applicable to Sunni Muslim terrorist members of Al-Gama’a al-Islamiyya, Al-Jihad, Islamic Brotherhood, Hamas, Pakistan’s Harakat ul-

¹⁰⁰ Anonymous ‘al Qaeda member’ quoted in Rohan Gunaratna, *Inside Al Qaeda: Global Network of Terror* (New York: Columbia University Press, 2002) p. 35

¹⁰¹ Bruce Hoffman, *Inside Terrorism* (London: Victor Gollancz, 1998) p. 88

¹⁰² Gary Ackerman and Laura Snyder, ‘Would They If They Could?’, *The Bulletin of the Atomic Scientists*,

¹⁰³ While bin Laden appears to be knowledgeable of the Koran and is very devout, by his own lights, he is not a recognised Muslim religious authority and therefore has no right in Muslim jurisprudence to issue religious edicts, or *fatwas*.

¹⁰⁴ Shaykh Usamah Bin-Muhammad Bin-Ladin, Ayman al-Zawahiri, amir [chief or leader] of the Jihad Group in Egypt, Abu-Yasir Rifa’i Ahmad Taha, Egyptian Islamic Group, Shaykh Mir Hamzah, secretary of the Jamiat-ul-Ulema-e-Pakistan, Fazlur Rahman, amir of the Jihad Movement in Bangladesh, ‘Jihad Against Jews and Crusaders: World Islamic Front Statement,’ 23 February 1998, reproduced by the Federation of American Scientists (<http://www.fas.org/irp/world/para/docs/980223-fatwa.htm>)

Ansar, and the Philippines' Abu Sayyaf.”¹⁰⁵ (Al Qa'ida, another largely Sunni organisation, is a surprising omission from this list.) What applies to footsoldiers and cannon fodder might not apply to the leaderships of these organisations, but the profile is still valuable because it provides close empirical support¹⁰⁶ for some of the rather theoretical and anecdotal arguments about religious terrorism and raises intriguing questions about the use of WMDs.

According to Schbley, Shi'a religious terrorism is “mostly executed for fulfilling personal salvation by answering perceived divine message/will, or following directives from charismatic religious leaderships” and the terrorists’ “perceived religious obligations and divine messages transcend social consciousness and social obligations.” “To Shi'a religious terrorists, killing an infidel has Allah's blessing, and is not considered by them to be unethical or immoral, let alone criminal.” Nonetheless, there is one telling exception to their willingness to kill: according to Schbley, “A Shi'i terrorist's target would most likely be well-defined, limited in scope and dimension, and would not transcend a concentric target zone. *Most Shi'a religious terrorists would not willingly use chemical, biological, or nuclear weapons.*” [emphasis added]¹⁰⁷

We can only speculate to what extent the istishadeens' attitudes towards WMDs reflect those of Hezbollah's leadership. They do suggest that finding people willing to develop or deliver WMDs might not be easy, at first, even among those already committed to dying for their cause, but they also show a deference to authority that implies the istishadeen's minds could be easily changed. In any case, '9/11' has clearly shown that some religio-political terrorists have no qualms about mass-casualty

¹⁰⁵ Ayla Schbley, 'Defining Religious Terrorism: A Causal and Anthological Profile' *Studies in Conflict & Terrorism*, no. 26, 2003, p. 121

¹⁰⁶ The study employed 'a convergence of psychometric measures from 356 suicide-bombers, taped self-immolations of 15 terrorists and 918 zealots [sic], and triangulated anthologies.' Abstract, *ibid.*, p. 105. The distinction between 'zealots' and 'terrorists', if any, is unclear, although the 'terrorists' were videotaped, while the 'zealots' voices appeared on audio tape. The psychometric measurements were obtained by means of a self-administered questionnaire handed to Hezbollah militants, many apparently wearing Semtex bombs, after a parade.

¹⁰⁷ Ayla Schbley, 'Profile', *op. cit.*, pp. 120-121. See especially traits 10, 11, 16, 17, 18, 20, 21, 22, 23, 29, 30, 31.

terrorism. For people like these, the very characteristics of nuclear weapons that might repel militant separatists could well be their most attractive features.

Cults and new religions: The 'Rajneeshis' and the Aum Shinrikyo

Violence by religious cults or 'new religions' has usually lacked political motives and in recent years has been turned inwards, towards members, rather than against the outer world, but it has resulted in very large numbers of deaths in some cases. Although this is not terrorism in the usual sense, "it seems that the line between internal and external violence is a thin one, and could be crossed relatively easily, depending on a combination of circumstances and doctrinal beliefs. For this reason, in order to make an appropriate analysis of the potential for terrorism from marginal religious movements, it seems wiser to research violence in such groups in general."¹⁰⁸ The claim that inwardly- and outwardly-directed cult violence are essentially the same is probably false; the political, social, and psychological dynamics involved in each are surely very different, just as the psychologies of individual murderers and suicides are usually very different. Nonetheless, the sheer level of violence that has been associated with some cults and the fact that it has even occasionally been directed outwards provide reason enough to monitor them closely.

The mass suicide by more than 900 members of Jim Jones' People's Temple in Guyana in 1978 is possibly the best known example of intra-cult violence, but there have been several other notable examples in recent history. Another involved the deaths of at least 780 and possibly more than 1000 members of Joseph Kibwetere and Credonia Wmerinde's millenarian Movement for the Restoration of the Ten Commandments in Uganda in 2000. In this case, members were burnt alive in a church, clubbed, stabbed, strangled, or poisoned. By comparison, the 1997 suicide of 39 members of the Heaven's Gate cult in Rancho Santa Fe, California, although better known in the West, is hardly significant in the annals of cult-inspired killing.

¹⁰⁸ Jean-François Mayer, 'Cults, Violence and Religious Terrorism: An International Perspective' *Studies in Conflict & Terrorism*, No. 24, 2001, pp. 362-363

Some cults have directed violence outwards in terrorism, however. Followers of ‘Bhagwan Shree Rajneesh’ (an assumed name and title) carried out the worst bioterrorist attack in American history when they introduced cultured salmonella bacteria into the salad bars of ten restaurants in The Dalles, Oregon, in 1984. At least 751 people were sickened by the attack, but the total number may be very much higher because of the typical under-reporting of salmonellosis.¹⁰⁹ We cannot say at this remove whether the cult intended to kill – salmonella seldom does – but, given the scale of the attack, it must at least have been a recognised possibility.¹¹⁰ One report suggests, however, that Rajneesh vetoed the idea of using *salmonella typhi*, a more dangerous strain of bacteria, on the grounds that the purpose of the attack was to incapacitate people and therefore lower the voter turnout in a local election in which the Rajneeshis had an interest, not to kill in large numbers, although a few fatalities would apparently have been acceptable.¹¹¹

By far the most important example of an aggressive cult, however, is the Aum Shinrikyo, the very large, wealthy, and powerful Japan-based cult that gained infamy for its 1995 sarin nerve gas attack on the Tokyo subway.

On the morning of March 20, 1995, the Aum attempted to murder tens of thousands of innocent people in order to create unimaginable disorder and chaos. ... [T]he Tokyo subway attack involved the indiscriminate use of the chemical nerve agent sarin on an enormous civilian population. Had the chemical mixture and delivery system been slightly different, the resulting tragedy would be unprecedented, if not beyond comprehension.¹¹²

¹⁰⁹ “Because many milder cases are not diagnosed or reported, the actual number of infections [not referring to this specific incident] may be thirty or more times greater.” Centers for Disease Control, Division of Bacterial and Mycotic Diseases ‘Disease Information: Salmonellosis: General Information’ (http://www.cdc.gov/ncidod/dbmd/diseaseinfo/salmonellosis_g.htm)

¹¹⁰ “Salmonella gastroenteritis ... is generally a self-limited illness; no treatment is required and death is rare. In infants under one year of age, however, invasion of the bloodstream frequently occurs and antibiotic treatment is recommended.” No author credited, “Infection: Infections of specific organ systems: Gastrointestinal infections: Salmonella” *Encyclopedia Britannica 2004 Standard CD-ROM edition*.

¹¹¹ John V. Parachini “Comparing Motives and Outcomes” *op. cit.* p. 390

¹¹² *Global Proliferation of Weapons of Mass Destruction: A Case Study on the Aum Shinrikyo* Senate Government Affairs Permanent Subcommittee on Investigations, October 31, 1995, Staff Statement, reproduced on Federation of American Scientists website (http://www.fas.org/irp/congress/1995_rpt/aum/index.html)

Although this incident is the best known, Aum was actually responsible for at least three separate gassings that killed a total 19 people and injured thousands, some of them permanently, as well as an unknown number of individual murders and attempted murders.¹¹³ When Japanese police raided a cult building known as Satyan (Shiva) 7, they found “a moderately large-scale chemical weapons production facility, designed by cult engineers, with first-rate equipment purchased over-the-counter.”¹¹⁴ Although the plant was “crude by industry standards,” it was “designed to produce sarin, not on a small terrorist scale, but in nearly battlefield quantities: thousands of kilograms a year.”¹¹⁵ Aum also produced VX gas, used in at least one murder, and attempted to attack Shinjuku Station in Tokyo using a simple binary device capable of producing enough hydrogen cyanide gas “to kill between 10,000 and 20,000 people.”¹¹⁶

Aum dabbled in bioterrorism, building a total of three laboratories for toxin production – one was in place by 1990, but was later replaced by two others – and tried but failed to poison members of Japan’s Imperial Family, among others, with various biological agents, including botulinum, clostridium, and anthrax.

Unlike many other terrorist groups or movements, Aum is positively known to have been interested in radiological or nuclear weapons. Specifically, “various police sources indicate that [Aum’s ‘Construction Minister’ Kiyohide] Hayakawa was interested in extracting uranium from Australia for the development of nuclear weapons.”¹¹⁷ In 1993 the cult bought a pastoral lease and a number of mining leases on an Australian sheep ranch with a known uranium deposit and discussed buying a ship to move uranium ore overseas with the organisation’s consulting geologist. It brought earthmoving equipment to the ranch and set up a small laboratory. Although its activities in the

¹¹³ Factual material on Aum Shinrikyo drawn from: *Global Proliferation of Weapons of Mass Destruction*, *ibid*; Kyle B. Olson ‘Aum Shinrikyo: Once and Future Threat?’ *Emerging Infectious Diseases*, Vol. 5 No. 4 July/August, 1999, (special issue), pp. 513-516; and Jackie Fowler, ‘Aum Shinrikyo’, *The Religious Movements Homepage Project @The University of Virginia*, (<http://religiousmovements.lib.virginia.edu/nrms/aums.html>), except where otherwise indicated.

¹¹⁴ Kyle B. Olson, *ibid.*, p. 514

¹¹⁵ *Ibid.*

¹¹⁶ *Global Proliferation of Weapons of Mass Destruction: A Case Study on the Aum Shinrikyo*, *op. cit.*

¹¹⁷ *Ibid.*

laboratory during its short tenure on the ranch remain rather mysterious, Aum is known to have tested sarin gas on some of the ranch's sheep. Also in 1993, it attempted to buy a sophisticated laser measuring device, an interferometer that was designated as 'dual-use' by the U.S. government because it could be used to measure the plutonium spheres at the heart of nuclear weapons, as well as a vibration isolation table that could be used for the same purpose. However, the manufacturer became suspicious, alerted the export licensing authorities, and the sale was never completed. Shortly before the 1995 Tokyo subway attack the cult tried to purchase a \$450,000 laser welder from a California company and indicated they wanted to be able to use the machine in a sealed room and operate it via a glove box, which would only be necessary if they were working with hazardous materials, including radioactive substances.

It is important to understand Aum's ideology. Shoko Asahara (an assumed name) originally propounded a doctrine based largely on Buddhism, although it combined elements from Hinduism, a fixation on Shiva (Satyan in Japanese), the god of destruction, and from Christianity, a belief in Armageddon, the violent end of the world in which only an elect few would survive and be elevated to a higher state of being. Asahara began writing apocalyptic tracts in the late 1980s. Most of his predicted dates for the beginning of the war to end the world were between 1996 and 1998, but he later moved the date up to 1995. It is clear that the Aums' planned acts of mass-casualty terrorism were intended to precipitate the final war, a nuclear cataclysm.

Asahara himself was markedly paranoid, with the organisation as a whole becoming ever more so after the devastating defeat of the Aum's political party in 1990. In 1994, for example, Asahara claimed that since 1988 he and his followers had been under incessant attack by Japanese and American helicopters spraying them with gases such as sarin wherever they went.

Aum Shinrikyo illustrates many of the characteristics and behaviours of cults that might turn to terror. Not all of the following, developed by Jean-Francois Mayer, apply to Aum, nor to all potentially violent religious groups, but combined they form an interesting profile:

- Staging a spectacular action allows a small group to attract the attention of the world and may to some extent be intended to reach that goal.
- While opposition from the outside can reinforce tendencies in a group toward violent reactions, internal dissent and protest (or other developments inside the group) seem in many cases to have triggered the turn toward violence.
- A conflict between a religious group and the surrounding society may also contribute to violence; ... in the case of a fragile group, even a limited level of opposition can be perceived as unbearable.
- Apocalyptic thinking creates an atmosphere conducive to the legitimation of violence and—in some cases—terrorist actions. However, apocalyptic views in themselves do not seem to constitute a sufficient reason for violence, other factors will be at least as important.
- When religious beliefs are used for justifying violence, violent actions tend to become endowed with cosmic dimensions, and there is nothing left to restrain them.
- There is not a single factor that seems sufficient for identifying a tendency of a group toward violence. However, past cases show that violence at a low level often preceded more serious acts of violence or terrorism.¹¹⁸

Obviously, the presence of just one or two isolated factors does not indicate any special tendency toward violence. For instance, a charismatic leader at the helm of a group in a commune withdrawn from the world is obviously not in itself sufficient for raising alarm. But if there is an isolated group stockpiling weapons, with a declining and paranoid leader feeling persecuted, cultivating conspiracy theories, and having already encouraged his followers to break the law on some occasions, it might then be legitimately concluded that this was a group requiring monitoring. There is no certain

¹¹⁸ From Jean-Francois Mayer 'Cults, Violence and Religious Terrorism: An International Perspective' *Studies in Conflict & Terrorism*, No, 24, 2001, pp. 5-10

method for assessing if a group presents a potential danger, but it seems possible to identify potential warning signs.¹¹⁹

Single-issue terrorism

There are a variety of active single-issue groups that have taken to terrorism in the past to make their points, or may do so in the future. They include eco-terrorists and similar environmentalists, including anti-nuclear activists, animal liberationists, ‘right to life’ activists, and others.

To begin with eco-terrorism, there would seem to be no reason why environmentalists might perpetrate the worst possible kind of ecological disaster by detonating a nuclear weapon or an RDD, or causing a radiation release. Speaking of potential eco-terrorist threats to the Yucca Mountain waste storage site or the Nevada Test Site, for example, Robert Futrell and Barbara G. Brents put a conventional argument:

[T]he movement is rooted in the pacifist peace movement and has expressed a clear philosophy of nonviolence that they have embodied in their actions. This long standing commitment to nonviolent ethics makes terrorist violence highly unlikely at either facility, even if support recedes, allies defect, or unorganized and unformulated actions become more common. Thus, to damage the facilities, especially in any way that would risk radioactive contamination of humans and the environment, would be to damage the foundation on which protesters’ actions rest.¹²⁰

However, others argue that nuclear terrorism is not entirely inconceivable, even for anti-nuclear terrorists, although they would not necessarily be intent on causing massive casualties. Rather, they would be interested in exposing the risks of atomic energy and injuring the nuclear power industry in the process.

¹¹⁹ *Ibid.*, p. 10

¹²⁰ Robert Futrell and Barbara G. Brents ‘Protest as Terrorism? The Potential for Violent Anti-Nuclear Activism’ *American Behavioral Scientist*, Vol. 46 No. 6, February 2003, p. 759

The political goals of such groups dictate that, for the most part, they discriminate in their activities and develop operations with limited objectives, targets, and scale. The possibility exists, however, that fringe groups might view an attack on a nuclear facility that resulted in a radiation leak as a prime option for illustrating to the public the dangers of nuclear power. These groups may also attack nuclear fuel or waste in storage or transit in an attempt to dramatize the environmental dangers the material poses.¹²¹

At the most extreme fringes of the environmentalist movement there are even some, sometimes calling themselves 'green anarchists', or 'deep' or 'restoration' ecologists,¹²² who would advocate the annihilation of human civilisation so that the earth's ecology could regenerate itself without human overpopulation and industrial and technological interference. Walter Laqueur argues that they could turn to terrorism to achieve their ends,¹²³ while Charles Ferguson and William Potter suggest they could try to breach a reactor's containment vessel to hasten the environmental apocalypse and, like the other putative nuclear eco-terrorists, alert the public to the dangers of nuclear energy.¹²⁴

A variety of single-issue groups might also find one form of nuclear terrorism or another attractive, as one tactic among many.

[They] conceivably could attract extremists who might advocate nuclear terrorism as a way to force the public and government to recognize a perceived problem or concern. Groups of this type have very targeted goals that do not include killing thousands or even causing mass disruption. On the other hand, factions within these groups might turn to the lesser forms of nuclear terrorism, such as radiological dispersion devices, or even nuclear hoaxes,

¹²¹ Charles D. Ferguson and William Potter, *The Four Faces of Nuclear Terrorism* (Monterey: Center for Nonproliferation Studies, 2004) p. 25

¹²² This is a most unfortunate nomenclature, because restoration ecology is a respectable discipline that concentrates on restoring the natural ecology in areas that have been damaged by human activity or natural disaster.

¹²³ Walter Laqueur, 'Postmodern Terrorism', *Global Issues, An Electronic Journal* of the U.S. Information Agency, Vol. 2, No. 1, February 1997 (<http://usinfo.state.gov/journals/itgic/0297/ijge/gj-3.htm>)

¹²⁴ *Ibid.*, p. 196

much the way anthrax hoaxes have been used to disrupt abortion clinics.¹²⁵

¹²⁵ *Ibid.*, p. 20

Chapter 4: Terrorism and Nuclear Deterrence

Treating the question of going nuclear as simply involving the most massive of mass casualty terrorism would obscure some important strategic considerations. Perhaps this is a fair assessment of terrorist calculations, to the extent that they make them at all: perhaps they indeed do not look beyond the slaughter and disruption they could cause, the political leverage they dream of acquiring, or the prestige they imagine they could accrue. However, these weapons are generally perceived to be qualitatively different from all others, and their use would have national and international implications beyond similarly destructive conventional attacks (although there are few conventional modes of attack available to terrorists that could emulate even a ‘small’ nuclear explosion). We should therefore briefly examine some matters beyond the raw willingness to kill *en masse*; in short, we must examine nuclear strategy and deterrence as it relates to terrorists.

It has become something of a cliché to say, with Admiral Richard W. Mies, that terrorists would not be directly deterred from using nuclear weapons by the threat of nuclear retaliation because their weapons have no return address.

The post-Cold War world is a more chaotic place. Strategic deterrence, which worked well in the bipolar framework of the Cold War, may not work as well in a multipolar world of unpredictable, asymmetric threats, and in some cases, it may fail. How do you deter a threat that has no return address? How do you dissuade a threat that is faceless?¹²⁶

The argument is narrowly correct in terms of modern transnational terrorist groups that, by definition, have no one host, sponsor, or homeland. However, at least two important qualifications apply. First, while terrorist groups themselves might not be directly deterred by the threat of massive retaliation, host or sponsor states might be, and

¹²⁶ Adm. Richard W. Mies, Commander in Chief, U.S. Strategic Command, “Testimony Before The Senate Armed Services Committee Strategic Subcommittee On Command Posture,” July 11, 2001, pp. 4-5 (<http://armed-services.senate.gov/statemnt/2001/010711mies.pdf>)

indeed should be, which could have an indirect or secondary deterrent effect on militant groups. Second, it may not in fact be impossible to trace a weapon to its source.

With regard to the first, it is sometimes speculated that a state might actively or passively help a terrorist group to acquire a nuclear weapon. It is almost inconceivable, however, that any state, of any stripe, would knowingly allow a nuclear weapon, controlled by actors that were not themselves under the state's tightest possible control and hence effectively part of it, on its soil if for no other reason than the fear that it might be used against itself, nor could it allow the expertise and physical plant required to build one to be outside of state control. Why sponsor a nuclear program if the state were not the primary beneficiary? In the case of second-tier nuclear weapons states, the weapons themselves are national treasures, bought at great cost, invested with immense symbolic value, and therefore presumably kept under tight control. (It might be argued that the A.Q. Kahn episode is evidence against claims for tight control by new nuclear weapons states. However, this case was one of a state sharing some nuclear technology – but not fissile materials and certainly not bombs – with other friendly states, not terrorists.)

Under these circumstances, nuclear terrorism, if it occurred, would most probably be a case of a state using an unconventional delivery system for a nuclear weapon, a potentially attractive option if the attack were thought to be deniable or if the state lacked suitable delivery vehicles, such as intercontinental ballistic missiles.

That, at any rate, is how it would be seen by the victim and the international community. The possibility that a terrorist weapon could be traced back to the sponsor, even if relatively low, should still be too high in relation to the worst possible consequences – nuclear annihilation – for a rational state to sponsor or even knowingly to host nuclear terrorists. Even passive, unwitting hosts might face some level of retaliation if it could be argued that they *should* have known about the terrorists on their soil. This is, of course, especially true since the enunciation on September 11, 2001, of the so-called First Bush Doctrine, in which U.S. President George W. Bush announced that the

United States would “make no distinction between the terrorists who committed [the 9/11 attacks] and those who harbour them.”¹²⁷

Not all states or their leaderships are necessarily rational, of course, but it is still difficult to imagine any particular state actively sponsoring nuclear terrorism. Both the obvious potential candidates, Iran and North Korea, have been engaged in fairly risky nuclear brinkmanship, but it stretches credulity to think that either would sponsor a terrorist nuclear attack on another state. North Korea has consistently used its nuclear weapons program as a bargaining chip or, more accurately, as blackmail in the pursuit of concessions from the West, and even so erratic a ruler as Kim Jong Il would not launch a nuclear attack of any sort unless he were *in extremis*, facing an imminent invasion by the combined forces of the United States and South Korea, perhaps, or facing the collapse of his regime for other reasons. Under those circumstances, however, he would be unlikely to deliver his weapons clandestinely. Possibly pursuing a nuclear weapons program under the cover of a civilian nuclear power program is proving to be risky enough for Iran, with increasing international pressure and hints of military intervention; sponsoring a nuclear attack would simply seal its fate.

The risk is compounded by the fact that the wounded party might not be over-concerned with proof of sponsorship. After all, the most likely target, the United States, invaded two countries, toppled their governments, and has been responsible for anywhere between ten and a hundred thousand civilian deaths (the latter figure is controversial)¹²⁸

¹²⁷ George W. Bush quoted in Peter Singer, *The President of Good and Evil* (New York: Dutton, 2004) p. 144

¹²⁸ The lower figure represents the lowest, most conservative, broadly-accepted estimate. The higher figure comes from a cluster sample survey of Iraq carried out in September, 2004. “Most individuals reportedly killed by coalition forces were women and children. The risk of death from violence in the period after the invasion was 58 times higher (95% CI 8.1-419) than in the period before the war. ... Making conservative assumptions, we think that about 100000 excess deaths, or more have happened since the 2003 invasion of Iraq.” Les Roberts, Riyadh Lafta, Richard Garfield, Jamal Khudhairi, and Gilbert Burnham “Mortality before and after the 2003 invasion of Iraq: cluster sample survey” *The Lancet*, October 29, 2004 (<http://image.thelancet.com/extras/04art10342web.pdf>). This study has been criticised on methodological grounds. For instance, the 95% confidence interval lies between 8,000 and 194,000 deaths, an enormous range, and the authors seem to have arbitrarily chosen the midpoint for their estimate.

in the process, largely because of the states' associations, proven in one case but merely assumed in the other, with an attack that killed three thousand Americans. How might it respond to one that killed anywhere from 20,000 to half a million citizens,¹²⁹ devastated Manhattan, and crippled the national and global economies? We might hope that even the bellicose and unilateralist United States would not risk striking an innocent target, but the possibility of nuclear retaliation against a sponsor, if it were identified to America's satisfaction, is unfortunately quite real.

The other members of the P-5 (the permanent members of the U.N. Security Council, the original nuclear states) have historically been less eager to go to war than the United States, and so might be capable of a more measured response, although how Russia might react to a terrorist nuclear attack is uncertain. If it believed that Chechen separatists were to blame, it is conceivable that it would use the opportunity to deal with their Chechnya problem once and for all – and teach other nationalist movements a lesson – by massive retaliation that might include nuclear strikes. Grozny, after all, has already been carpet-bombed by the Russians to the point of virtual demolition. We have to wonder how Russia could escalate its military action, how it could punish Chechnya more severely, *without* resorting to nuclear weapons.

Which brings us to the second point: determining the source of the bomb itself. This would be a difficult and complex process, but it might be successful. Known techniques would at least considerably narrow the range of possibilities. A detailed

The Brookings Institution regularly publishes a list of estimates by various sources in its *Iraq Index*. The March 7, 2005, edition estimates ranged from more than 10,000 (U.K. Foreign Secretary Jack Straw) to more than 30 000 (The Human Rights Organisation, Iraq), although several estimates were several months to a year old. Michael E. O'Hanlon and Adriana Lins de Albuquerque, *Iraq Index: Tracking Variables of Reconstruction & Security in Post-Saddam Iraq* The Brookings Institute (<http://www.brookings.edu/fp/saban/iraq/index.pdf>, regularly updated)

¹²⁹ Based on a one kiloton ground burst – a reasonable estimate of an IND's yield – and a conservatively estimated population density of 30,000 per square kilometre on a Manhattan working day. After: *The Effects of Nuclear Weapons*, 3rd ed. (Washington, DC: U.S. Department of Defense and U.S. Department of Energy, 1997), and Richard Rhodes, *The Making of the Atomic Bomb* (New York: Simon and Schuster, 1986) quoted in: Richard A. Falkenrath, Robert D. Newman and Bradley A. Thayer, *America's Achilles' Heel: Nuclear, Biological, and Chemical Terrorism and Covert Attack*, BCSIA Studies in International Security (Cambridge, Mass: MIT Press, 1998) p. 157. A 10kt burst – of a stolen tactical weapon, for example – in Manhattan could easily kill half a million people.

chemical and radiological analysis of the fallout would reveal a good deal about the fissile materials and bomb components. According to David Hughes, Lawrence Livermore Laboratories had by 1995 begun developing techniques for tracing terrorist nuclear weapons back to their origins. They include mass spectrometry of fissile-material and bomb fragments that would reveal components or impurities, including tritium, U-240, neptunium, americium, gadolinium, curium, and promethium in the plutonium or HEU core of the weapon.¹³⁰ The IAEA keeps detailed records, including the ratios and types of isotopes present in each batch, of fissile materials produced under IAEA safeguards that would assist in this kind of backtracing. However, they exclude production by the ‘P-5’, the five original nuclear powers and permanent members of the U.N. Security Council, as well as nonsignatories to the NPT, such as Pakistan, India, Israel, and North Korea, and, obviously, any clandestine operations. Still, as David Rothberg points out, IAEA records, as well as any voluntarily supplied by the P-5, would be useful for excluding certain sources, while other techniques could indicate how the material was enriched – “something else to provide clues” – and, perhaps, where the original uranium had been mined.¹³¹

Estimating the bomb’s explosive yield would be a relatively straightforward matter, although its value as evidence would be ambiguous. Improvised nuclear devices (INDs) are likely to be in the low kiloton to sub-kiloton range and would probably be particularly ‘dirty’ and inefficient. Even the combination of low yield and inefficiency would not suffice to prove that the weapon had not come from a state, however. A prudent state launching a clandestine attack on another, or allowing terrorists to do so, would do well to disguise its weapon as an IND.

The situation would be particularly dangerous and delicate in South Asia, where three nuclear powers, Pakistan, India, and China, with long and complex histories of mutual antagonism confront each other across disputed borders. India and Pakistan

¹³⁰ David Hughes, ‘Uranium Seizures Heighten Terrorism Concerns,’ *Aviation Week and Space Technology*, April. 3, 1995, p. 63, cited in Barry L. Rothberg ‘Note: Averting Armageddon: Preventing Nuclear Terrorism in the United States’ *Duke Journal of Comparative & International Law*, Vol 8 No. 1, Fall, 1997, p. 125 (<http://www.law.duke.edu/shell/cite.pl?8+Duke+J.+Comp.+&+Int'l+L.+79>)

¹³¹ Barry L. Rothberg, *ibid.*, pp. 125-126

frequently accuse one another, with justification in many cases, of fomenting or actually carrying out terrorism on one another's territories. If one of these states was taken to be behind a 'terrorist' nuclear attack in the region, the risks of the incident escalating into a full nuclear exchange would be very high indeed.

Whether the victim state were nuclear-armed or not, and quite apart from the practical problems of identifying and locating the bombers and their hosts or sponsors, it would still have to consider the claim, which would surely ensue, that the bombers had more than one device and decide on its response in that light. The most worrying scenario would be one in which terrorists claimed responsibility for the first bomb and then not only said they had more weapons, but that they had been pre-positioned, ready to detonate, in various cities.¹³² A government might be able to make some informed estimates of the plausibility of the claim. For example, if the bomb were detonated sometime after a detected theft of a weapons-useable quantity of fissile material, the analysis of the first blast could suggest whether or not enough remained to make another bomb. However, fissile materials around the world are still 'loose' enough that this might not be enough in itself to adequately assess the claim.

It is worth speculating briefly on the likely consequences of the claim, if it were made public, to illustrate the issues that a government would have to consider. (The following may look apocalyptic, like something out of a science fiction novel, but it is, unfortunately, all too plausible.) A public announcement of a threat to other cities might not even be necessary – simple panic and the reasonable belief that 'if it happened to New York (or London or Moscow), it could happen to us' could do the trick. These effects would be in addition to those directly caused by the initial blast.

First of all, there would be an immediate and disorderly evacuation of other major cities, regardless of official requests or orders to either go or stay. Air and rail traffic would be brought to an almost complete halt, in the probably futile attempt to find the other devices. Clogged highways would mean that road traffic, which would in any case

¹³² Cf. Stan Erickson "Nuclear Weapon Prepositioning as a Threat Strategy" *Journal of Homeland Security*, July, 2001 (no print publication data available) (<http://www.homelandsecurity.org/journal/articles/displayArticle.asp?article=15>)

be subject to security measures similar to those applying to air and rail, would also almost stop, with the loss of untold quantities of perishable foodstuffs and the delayed supply of imperishables. Martial law would be declared nationwide, all military, paramilitary, and police reserves would be called up, and civil liberties, including press freedom, would be suspended. Emptied city centres would be patrolled against looters, while an over-extended NEST (U.S. Nuclear Emergency Search Team) or the local equivalent attempted to simultaneously scan all of them for signs of other bombs.

Within hours or days supplies of food, water, and energy would begin to break down, especially in the rural areas that had suddenly found themselves the unwilling hosts of millions of displaced city dwellers. Health conditions in the enormous tent cities would rapidly decline from merely squalid to positively dangerous, with risks that cholera, *e. coli.*, or other infections could break out on a massive scale. Social conditions, meanwhile, could degenerate into malignant Hobbesian anarchy as resources became increasingly scarce. The repercussions on global markets, already battered by the initial blast, would be immediately devastating and accumulate over time.

Under these circumstances, the culprits might be tempted to make some fairly immoderate demands. Brian Jenkins, however, claims that “[t]ranslating the enormous coercive power that a nuclear weapon would give a terrorist group into concrete political gains ... poses some difficulties.”¹³³ He argues that governments simply could not comply with some essentially impossible demands, such as their own dissolution, that would be commensurate with the threat.

Nor could terrorists enforce permanent policy changes unless they maintained the threat indefinitely. And if a government could not be assured that the threat would be dismantled once the demands were met, it would have little incentive to negotiate. ... I am suggesting that it is not easy for terrorists, even if they are armed with nuclear weapons, to achieve lasting political results. They

¹³³ Brian M. Jenkins, ‘Is Nuclear Terrorism Plausible?’ in Paul Leventhal and Yonah Alexander (eds.) *Preventing Nuclear Terrorism* (Lexington, MA/Toronto: Lexington Books, 1987) p. 33

might find nuclear weapons to be as useless as they are powerful.¹³⁴

This argument is not entirely convincing, however. It might apply to the developed states that are the likely targets of nuclear terrorism, if the terrorists were indeed making impossible demands. However, if the terrorist group was al Qa'ida, for example, and the demand was that the U.S. remove its troops from the Middle East, especially Saudi Arabia and Iraq, and cease its military and financial support for Israel, the U.S. could comply with it, although the political costs of doing so would be high. Deciding to set the precedent that states could be blackmailed by terrorists would be agonisingly difficult, even when thousands or millions of lives were at stake.

Furthermore, some weak states – in Africa, perhaps – could succumb to the threat of nuclear destruction and essentially hand government over to the terrorists. While such states would not be the first targets of nuclear terrorists, they might be tempting as potential havens after a nuclear attack. If the terrorists were prudent enough to restrict their demands to the state's keeping their presence secret and providing a modest level of support – if, in other words, they kept their coup silent and invisible – they might be safe for a good while, especially if the state in question were of little interest to international media or intelligence agencies.

In any case, both sides would find themselves in something of a dilemma after the first bomb had been detonated in a developed state. Neither government nor terrorists could ever definitively prove to their respective audiences – their public in one case and the target government and the international community in the other – that there were no more bombs on the victim's territory when an efficient multi-kiloton device (but almost certainly not an IND) can fit into a few dozen or hundred cubic feet and be shielded to the point that it produces no detectable radiation. Soviet 'suitcase nukes', in the unlikely

¹³⁴ *Ibid.*, p. 32

event that they exist, are still functional, and are in the hands of terrorists,¹³⁵ would naturally be even smaller and harder to find. Although almost any government would initially refuse to negotiate with terrorists, especially when there was little possibility of proof that the threat would be or had been dismantled, the mere idea that there was another bomb, if it were publicly known, would lead to some pressure, probably a considerable amount of pressure, to do just that.

In any case, nuclear terrorists might be not at all interested in political leverage of the kind Jenkins mentions. Their only goal might be to inflict the most massive possible damage on a target society or, in the case of an apocalyptic movement, even to precipitate a full-scale global nuclear war. Religiously motivated groups are the most likely to be interested in destruction more or less for its own sake, although any political leverage they would accrue would certainly be exploited to the full. Al Qa'ida, for example, might try to use nuclear blackmail to force America's withdrawal from the Middle East and to end to its support for Israel, but it might also be content with just causing massive injury to the U.S.

While they would probably consider themselves relatively immune from direct nuclear retaliation, terrorists contemplating going nuclear would still have to consider the day after, if only to a limited extent. On the one hand, as we have said, no state could possibly risk being identified as hosts or sponsors of the attackers, especially if a nuclear power or a state under the protection of one had been targeted, and so would be obliged for any number of good reasons, including the threats to their very survival from within and without, to make the most strenuous and visible efforts to root them out. Even nascent nuclear states with no love for the West, such as Iran and North Korea, would surely not be willing to risk annihilation as the cost of protecting terrorists.

¹³⁵ See Nikolai Sokov "Suitcase Nukes": A Reassessment", *op. cit.* Sokov quotes Igor Valynkin, the chief of the 12th GUMO, the Main Department of the Russian Ministry of Defence tasked with handling all nuclear weapons, as saying that the devices would have had very short maintenance schedules, possibly as little as six months. If certain crucial components, such as tritium boosters, were not replaced at regular intervals the bombs would go 'stale' and their nuclear yield could drop to close to zero. Since the window of greatest opportunity for theft occurred in the early 1990s, if any weapons were diverted at this point they would by now have missed twenty or more services and would be at or near the end of their useful lives.

On the other hand, many states would simply lack the capacity to actually find and disable terrorist groups and could unwillingly or unwittingly provide safe haven more or less indefinitely. Even the United States, some years into its full-scale, extremely costly, 'war on terror', has been unable to kill or capture all of al Qa'ida's high command, despite its invasions of Afghanistan and Iraq and the cooperation of Pakistan, a former host-cum-sponsor state.

Chapter 5: Is Al Qa'ida a Nuclear Threat?

“[A]cquiring weapons for the defense of Muslims is a religious duty. To seek to possess the weapons that could counter those of the infidels is a religious duty. If I have indeed acquired [nuclear] weapons, then this is an obligation I carried out and I thank God for enabling us to do that. And if I seek to acquire these weapons I am carrying out a duty. It would be a sin for Muslims not to try to possess the weapons that would prevent the infidels from inflicting harm on Muslims. – Osama bin Laden¹³⁶

The documents found in Afghanistan show that al Qaida members are neither supermen nor morons. Their efforts in making nuclear weapons were far less sophisticated than known state programs, but their determination to get nuclear weapons is astounding and their apparent willingness to use them is terrifying.¹³⁷

Al Qa'ida is unquestionably the best-known and, so far, the most destructive terrorist organisation in the world. Its psychological capacity for mass killing has been repeatedly and tragically demonstrated and, as the ambiguous remarks by bin Laden, above, suggest, it has also been known for some time to have an interest in acquiring nuclear and radiological weapons. Indeed, from time to time it has been rumoured that it had actually acquired some. However, an “extensive analysis of open source information and interviews with knowledgeable officials” concluded that there is “no credible evidence that either bin Laden or al Qa'ida possesses nuclear weapons or sufficient fissile material to make them” nor, indeed, that the organisation ever had any fissile materials at

¹³⁶ Al Qa'ida leader Osama bin Laden in interview with ABCNews producer Rahimullah Yousafzai “Terror Suspect,” published September 26, 2001, conducted December, 1998 (http://abcnews.go.com/sections/world/DailyNews/transcript_binladen1_981228.html)

¹³⁷ David Albright “Al Qaida’s Nuclear Program: Through the Window of Seized Documents,” Nautilus Institute Special Forum 47: November 6, 2002 (http://www.nautilus.org/fora/Special-Policy-Forum/47_Albright.html#sect2)

all.¹³⁸ In fact, many earlier reports such as those mentioned below now suggest, to the extent that they should be believed at all, that the organisation may simply have been defrauded of extraordinarily large amounts of money in its quest.

For example, Israeli intelligence claimed in 1998 that bin Laden paid two million pounds sterling to an intermediary in Kazakhstan on the understanding that he would deliver a miniature nuclear weapon, or ‘suitcase nuke,’ from the Kazakhstan government arsenal within two years. Later that same year Arab-language newspapers and news magazines claimed variously that al Qa’ida had either obtained nuclear weapons or was actively working towards doing so by means including ties with organised crime in Central Asia and the Caucasus. An article in the *Al-Watan Al-Arabi* magazine claimed that bin Laden gave Chechen criminals “\$30 million in cash and two tons of opium” in return for twenty warheads that al Qa’ida would reassemble into “‘instant nukes’ or ‘suitcase nukes’”.¹³⁹

There have also been claims that bin Laden has employed former Soviet nuclear scientists. The *Al-Watan Al-Arabi* source, for example, claimed that bin Laden had hired “hundreds” of disaffected former Soviet nuclear engineers and scientists to help him develop an indigenous nuclear capability.¹⁴⁰ As noted elsewhere, however, recent and credible sources say that the evidence of Russian experts working in weapons programs in states labelled “of proliferation concern” by the United States is “mostly anecdotal” and this, presumably, also applies to terrorist organisations.¹⁴¹

The very absence of terrorist nuclear attacks, so long after the collapse of the Soviet Union, is grounds for at least cautious optimism that al Qa’ida, and terrorists in general, do not have these weapons. It is also worth noting, in al Qa’ida’s ‘defence,’ that

¹³⁸ David Albright, Kathryn Buehler, and Holly Higgins “bin Laden and the Bomb,” *Bulletin of the Atomic Scientists*, January/February 2002, Vol. 58, No. 1, p. 23 (<http://www.thebulletin.org/issues/2002/jf02/jf02albright.html>)

¹³⁹ Kimberly McCloud and Matthew Osborne “WMD Terrorism and Usama bin Laden,” Center for Nonproliferation Studies (<http://cns.miis.edu/pubs/reports/binladen.htm>)

¹⁴⁰ McCloud and Osborne, *ibid.*

¹⁴¹ Sharon S. Weiner “Preventing Nuclear Entrepreneurship in Russia’s Nuclear Cities,” *International Security* 27.2 (2002) pp. 126 – 158, p. 135

the idea of attacking nuclear power stations was raised in the early stages of proposing the '9/11' attacks, but the idea was vetoed, apparently by Osama bin Laden himself.¹⁴²

On the other hand, the revelations about the Pakistani nuclear engineer A.Q. Khan's extensive clandestine nuclear technology trading network, the close relationship between elements of the Pakistani armed forces and their Directorate for Inter-Services Intelligence (ISI) and the former Taliban/al Qa'ida regime in Afghanistan, and the strong Islamist sentiments still held by many members of the Pakistani armed forces, all suggest that there is a risk that al Qa'ida may have or may sometime acquire nuclear technology.

The unclassified version of a CIA report to the U.S. Congress on the acquisition of WMD technology says that "al-Qa'ida was engaged in rudimentary nuclear research, although the extent of its indigenous program is unclear. Outside experts, such as Pakistani nuclear engineer Bashir al-Din Mahmood may have provided some assistance to al-Qa'ida's program. Bashir, who reportedly met with Bin Ladin, discussed information concerning nuclear weapons." It does not mention the Khan network in the context of al Qa'ida.¹⁴³

If it is unlikely that al Qa'ida has or will be able to produce nuclear weapons, the same cannot be said for radiological devices. As the Central Intelligence Agency points out,

Al-Qa'ida's end goal is the use of CBRN to cause mass casualties; however, most attacks by the group – and especially by associated extremists – probably will be small scale, incorporating relatively crude delivery means and easily produced or obtained chemicals, toxins, or radiological substances.¹⁴⁴

¹⁴² *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States* Official Government Edition (Washington: Superintendent of Documents, U.S. Government Printing Office, 2004) p. 172 (<http://www.gpoaccess.gov/911/pdf/fullreport.pdf>)

¹⁴³ Central Intelligence Agency (CIA) *Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 July Through 31 December 2003*, (http://www.cia.gov/cia/reports/721_reports/july_dec2003.htm)

¹⁴⁴ Central Intelligence Agency (CIA), Directorate of Intelligence "Terrorist CBRN: Materials and Effects" CTC 2003-40058, May 2003, no page numbers (http://www.odci.gov/cia/reports/terrorist_cbrn/CBRN_threat.pdf)

In a recent unclassified report the Agency again expressed its concern about the risk of terrorist RDDs and attacks on the nuclear power infrastructure by al Qa'ida and other groups.¹⁴⁵

In general terms, while al Qa'ida has had an active interest in obtaining nuclear and radiological weapons and the apparent psychological capacity to use them, it is reasonably certain that it does not and probably never has had nuclear weapons, if only because a beleaguered bin Laden would surely have used them before now, and the absence of any radiological attacks so far is cause to doubt its capacities in that regard as well. Indeed, its obvious failure to make good on any of the threats it made against the U.S. before the invasion of Iraq leads to the question as to whether, after the sustained American campaign against it, it has the organisational capacity to carry out any mass-casualty attacks at all.

To some extent, the answer to this question depends in turn, as Bruce Hoffman points out, on the answer to “what is al Qaida?”. Is it a tightly-controlled, centralised organisation (that could be nullified by decapitation)? Is it “a broader, more amorphous” body with a “loosely networked transnational constituency,” perhaps, or even a “franchise operation” with independent “local representatives” operating in its name?

Is al Qaida a concept or a virus? An army or an ideology? A populist transnational movement or a vast international criminal enterprise? All of the above? None of the above? Or, some of the above?¹⁴⁶

In the days before ‘9/11,’ al Qa'ida seems to have been in many ways an organisation of the first type: centralised, with a relatively clear hierarchy and lines of command and communication: “[h]istorically, al-Qaida has been a top-down organization

¹⁴⁵ Director of Central Intelligence, Central Intelligence Agency “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January Through 30 June 2003” (http://www.cia.gov/cia/reports/721_reports/pdfs/jan_jun2003.pdf)

¹⁴⁶ Bruce Hoffman “al Qaida, Trends in Terrorism and Future Potentialities: An Assessment” RAND Corporation, 2003 (<http://www.rand.org/publications/P/P8078/P8078.pdf>)

with strong central leadership control over almost all aspects of its operations.”¹⁴⁷ Other observers, however, point out that al Qa’ida’s strategy almost since its inception has been to limit membership of the organisation itself to a small, highly selected, and highly trained core and to carry out operations by collaborating with, or in some cases, clandestinely taking over, other militant Muslim organisations.¹⁴⁸

Since then, with the American campaign in Afghanistan and elsewhere, the destruction of its camps, and the capture or death of at least some of its leaders and members, al Qa’ida has appeared severely diminished; “truncated and besieged,”¹⁴⁹ as Cofer Black, the U.S. Coordinator for Counterterrorism, put it. When considering the views of some American officials, however, we should remember that they may have political or ideological motivations, whether conscious or not, for seeing al Qa’ida as a single coherent and fanatical organisation, rather than acknowledging that it may be able to tap into a widespread network of militant, religious, social, and financial organisations supported by an even broader antipathy for America and all its works in the larger Muslim community. As we point out below, there are risks in tarring all violent manifestations of Muslim resentment of the West with the al Qa’ida brush.

At the time of writing, Osama bin Laden and the remaining top leaders were thought by some to have very limited contact with or control over remaining al Qa’ida operatives, young and untried militants were apparently having to step into higher levels of command, and, as already noted, none of its grandiose threats against the United States had materialised. However, other groups were emerging that sometimes acted in al Qa’ida’s name and followed its ideology, even if they were not necessarily formally parts of that organisation. If that trend continues, and it appeared to be accelerating at the time of writing, al Qa’ida may indeed be becoming something more like a transnational movement, or even an ideology, rather than a coherent organisation. In fact, al Qa’ida has always operated in something like this fashion, raising funds and carrying out operations

¹⁴⁷ Cofer Black, Co-ordinator for Counterterrorism “al-Qaida: The Threat to the United States and Its Allies,” Testimony before the House International Relations Committee, Subcommittee on International Terrorism, Washington, DC, April 1, 2004 (<http://www.state.gov/s/ct/rls/rm/2004/31018.htm>)

¹⁴⁸ Cf Rohan Gunaratna, “Al Qaeda,” *op. cit.*

¹⁴⁹ Cofer Black, *ibid.*

through other groups, sometimes without those directly involved even realising they were working for it, as well as acting entirely on its own.

An anonymous American “Defense official,” for example, said of al Qa’ida that “we believe that the leadership is probably going to go more decentralized. It’s going to be more of a franchise-type thing.”¹⁵⁰ Quoting “many intelligence officials around the world,” the *New York Times* claimed that “more than a dozen regional militant Islamic groups [are] showing signs of growing strength and broader ambitions, even as the operational power of al Qa’ida appears diminished”.¹⁵¹ Various anonymous intelligence officials told the *Times* that a number of groups from North Africa to Europe, the Caucasus, and Central and Southeast Asia were loosely affiliated with al Qa’ida, while others drew inspiration, but neither financial nor logistical support, from bin Laden.

It can be assumed with reasonable certainty that remaining al Qa’ida cells would not have shut up shop and abandoned their ideology or plans simply because of the war on terror, even if their logistical, financial and organisational support had partly or entirely dried up. Indeed, the American invasions of Iraq and Afghanistan have probably strengthened their resolve and made further converts to the cause by being perceived to have fulfilled bin Laden’s claims about “the Zionist/Crusaders alliance” and its imperial ambitions, as expressed in his 1996 *fatwa*¹⁵² and elsewhere. Such cells, cut off from the main al Qa’ida leadership, could well become the nuclei for new Islamist terror organisations in their host countries and continue al Qa’ida’s general program under that name or others.

As the CIA’s then-Director of Central Intelligence (DCI), George Tenet, said, “as we continue the battle against al-Qa’ida, we must overcome a movement – a global

¹⁵⁰ ‘Defense Official,’ “News Transcript: Background briefing on the Al Qaeda terrorist network,” United States Department of Defense, February 19, 2002 (http://www.defenselink.mil/news/Feb2002/t02192002_t219alqa.html)

¹⁵¹ Raymond Bonner and Don van Natta “Regional Terrorist Groups Pose Growing Threat, Experts Warn” *New York Times*, February 8, 2004.

¹⁵² Osama bin Laden “Declaration Of War Against the Americans Occupying the Land of the Two Holy Places (Expel the Infidels from the Arab Peninsula),” 1996 (reproduced on http://www.pbs.org/newshour/terrorism/international/fatwa_1996.html)

movement infected by al-Qa'ida's radical agenda".¹⁵³ Other professionals concur: "al Qaida's biggest threat is its ability to inspire other groups to launch attacks, usually in their own countries," said an anonymous "senior European official."¹⁵⁴ A "senior Australian official," meanwhile, said that although the al Qa'ida that existed before 2001 could be credibly declared "finished," it was more accurate to see it today as a movement of like-minded individuals around the world who see America and the West as the enemy.¹⁵⁵

Al-Qaeda is not one organization, but a loose confederation of terrorist organizations with members living and operating in over 40 countries, including the United States. Recently, the head of Germany's intelligence service estimated that al-Qaeda is composed of approximately 70,000 people world-wide, with tens of thousands of these undertaking training at al-Qaeda camps in the Sudan, Yemen, and Afghanistan. The common elements among these groups include their Muslim faith, an intense disdain for anything Western, and their support for Osama bin-Laden. Bin-Laden continues to fund many of these groups. Although an estimated \$120 million of his assets have been frozen, some believe bin-Laden is still worth billions. At one point bin-Laden was reported to own or control some 80 companies worldwide.¹⁵⁶

Other analysts claim that al Qa'ida is far from finished. For example, Jane's Intelligence Diary said in May, 2004, that "[t]he key premise of the US-led 'war on terrorism' is that the USA and its allies will win – at least eventually. However, 33 months on from the 11 September 2001 attacks in the USA, there is mounting concern that Al-Qaeda and its international affiliates are actually stronger now than they were in

¹⁵³ Testimony of Director of Central Intelligence George J. Tenet before the Senate Select Committee on Intelligence "The Worldwide Threat 2004: Challenges in a Changing Global Context" 24 February 2004 (as prepared for delivery) (http://www.odci.gov/cia/public_affairs/speeches/2004/dci_speech_02142004.html)

¹⁵⁴ Bonner and Van Natta, *ibid.*

¹⁵⁵ *Ibid.*

¹⁵⁶ Jack Boureston and Charles Mahaffey "Al-Qaeda and Mass Casualty Terrorism: Assessing the Threat" *Strategic Insight*, October 1, 2003, Center for Contemporary Conflict (CCC), Naval Postgraduate School, Monterey, California (<http://www.ccc.nps.navy.mil/rsepResources/si/oct03/terrorism.pdf>)

2001.”¹⁵⁷ An anonymous CIA official, speaking to the American commission investigating the September, 11, 2001, attacks said that “Al-Qaeda ... has by no means been defeated and though weakened, it continues to patiently plan its next attacks. They may strike next week, next month or next year but they will strike.”¹⁵⁸ Yet another anonymous CIA member (now known to be Michael Scheuer), the author of *Imperial Hubris: Why the West Is Losing the War on Terrorism*¹⁵⁹ told the *London Guardian* that al Qaeda was “a much more proficient and focused organisation than it was in 2001, and predicted that it would ‘inevitably’ acquire weapons of mass destruction and try to use them.”¹⁶⁰

The most recent and tragic illustration of the tendency of other groups, possibly inspired by or affiliated with al Qaeda, to engage in mass-casualty terrorism was the train bombings in Madrid, Spain, on March 11, 2004, in which 190 people died and around 1800 were injured. The atrocity at Beslan, near Chechnya, was another example, although it could be argued that the taking of hostages for political leverage is qualitatively different to premeditated mass killing without warning. Spain’s initial impulse was to blame the Madrid attacks on the indigenous Euskadi ta Askatasuna (ETA, Basque Homeland and Liberty) group, but it later mentioned two previously little-known militant Islamic groups in connection with the bombings, and developments at the time of writing continued to point in that direction. One group, the Moroccan Islamist Combat Group

¹⁵⁷ No author named, “Is Al Qaeda winning the war?,” *Jane’s Intelligence Digest*, May 26, 2004 (<http://jid.janes.com>, more detailed URL not possible.)

¹⁵⁸ No author credited “Al Qaeda will strike again in U.S.: panel” *Agence France Presse (AFP) on Yahoo! News*, June 16, 2004 (http://news.yahoo.com/news?tmpl=story&u=/afp/20040616/pl_afp/us_attacks_strike_040616161223)

¹⁵⁹ Approved for publication by the CIA (according to the *New York Times* “Bush Considers Replacing C.I.A. Chief More Quickly” June 22, 2004 (<http://www.nytimes.com/2004/06/22/politics/22INTE.html>)). The *Guardian* (below) describes the author as “a serving official with nearly 20 years experience in counter-terrorism who is still part of the intelligence establishment” and remarks that “[t]he fact that he has been allowed to publish, albeit anonymously and without naming which agency he works for, may reflect the increasing frustration of senior intelligence officials at the course the administration has taken.”

¹⁶⁰ Julian Borger “Bush told he is playing into bin Laden’s hands” *GuardianUnlimited*, June 19, 2004 (<http://www.guardian.co.uk/usa/story/0,12271,1242639,00.html>)

(GICM)¹⁶¹ was a “principal focus of the investigation,” while another Moroccan group, the Salafiya Jihadiya, was another “focus of the investigation”¹⁶², and both were thought to be associated with al Qa’ida.¹⁶³

It must be repeated, though, that the whole notion of ideological linkage to al Qa’ida is loose and could be potentially treacherous, even if it is politically convenient for some. To be Muslim and opposed, even violently opposed, to American and allied actions in the Middle and Near East is not necessarily the same as subscribing to al Qa’ida’s ideological package. It is entirely possible, even easy, for a Muslim to arrive at an anti-American position without having been particularly influenced by al Qa’ida. One might fight to expel American forces from Iraq or Saudi Arabia, for example, or for an end to Western support for Israel, without wishing for the unification of all Arab-speaking lands, the imposition of the strictest *shari’a* law, or the restoration of the Caliphate. There is an obvious risk, in other words, of over-generalisation, over-simplification, stereotyping, and demonisation; of lumping all militant Muslims together in the ‘al Qa’ida-affiliated’ basket and ignoring potentially important differences between them and, which is perhaps worse, of ignoring the political grievances held against the generic ‘West’ and the U.S. by a great many Muslims, whether violently inclined or not, around the world. Such an impoverished analysis could lead to our ignoring significant differences among groups in religious affiliation (to one or other of the many Muslim sects and movements), in organisation, in strategies and tactics, in membership, recruitment, and constituency, in technical resources, and in the propensity to cause mass casualties.

¹⁶¹ CNN.com claims, apparently incorrectly, that this organisation appears on the U.S. State Department’s list of designated Foreign Terrorist Organisations (FTOs). It does not appear on the most recently available full list, published on May 23, 2003, nor does it seem to have been added subsequently. *Cf.* (<http://www.state.gov/s/ct/rls/fs/2003/12389.htm>)

¹⁶² Al Goodman and unnamed others, “Spain bombs: Moroccan group named” *CNN.com*, Tuesday, March 30 (<http://www.cnn.com/2004/WORLD/europe/03/30/spain.bombings/index.html>)

¹⁶³ CNN.com, *ibid.*

Al Qa'ida and Jihadist Strategy

Terrorism can be considered a reasonable way of pursuing extreme interests in the political arena. It is one among the many alternatives that radical organizations can choose. ... Strategic calculation is only one factor in the decision-making process leading to terrorism. But it is critical to include strategic reasoning as a possible motivation, at a minimum as an antidote to stereotypes of “terrorists” as irrational fanatics. Such stereotypes are a dangerous underestimation of the capabilities of extremist groups. Nor does stereotyping serve to educate the public – or, indeed, specialists – about the complexities of terrorist motivations and behaviors.¹⁶⁴

While some terrorists are still patriots and genuine revolutionaries, this pattern is no longer typical. Any survey of the world map of terrorism – the parts of the world where the most casualties occur – reveals the emergence of other features. It reveals not only growing fanaticism but also the growth of indiscriminate murder, the desire to exercise power, and sheer bloodlust.¹⁶⁵

Terrorism can be adopted as a tactic in a normal Clausewitzian strategy of employing force in the pursuit of political ends. Whether this applies to religiously-motivated terrorism as opposed to nationalist-separatist or revolutionary terrorism, however, is not clear, and will be discussed later in this section.

When it is understood as something other than a symptom of pathology, terrorism is typically described as ‘the weapon of the weak’; that is, it is said to be preferred by groups that cannot muster either sufficient popular support or military muscle to succeed with other tactics, whether military or political. While most writing about terrorist strategy has discussed the ‘traditional’ forms, nationalist/separatist or revolutionary, with transnational terrorism of the sort practised by al Qa’ida being a relatively new and less-studied form, some ideas applicable to the earlier forms can be generalised to the newer.

¹⁶⁴ Martha Crenshaw “The Strategic Logic of Terrorism,” *op. cit.* p. 504

¹⁶⁵ Walter Laqueur “Terror’s New Face: The Radicalisation and Escalation of Modern Terrorism” *Harvard International Review*, Fall 1998, Vol. 20, Issue 4 (<http://search.epnet.com/login.aspx?direct=true&db=afh&an=1418929>)

Martha Crenshaw provides a fairly comprehensive overview of the topic in “The Strategic Logic of Terrorism”. Although she addresses nationalist-revolutionary terrorism almost exclusively, many of her arguments could apply to other forms, and so her article will be dealt with in some detail. Crenshaw supports the ‘tactic of the weak’ argument, and makes the interesting claim that “[p]erhaps because groups are slow to recognize the extent of the limits to action, terrorism is often the last in a sequence of choices.”¹⁶⁶ She implies, in other words, that terrorism is often an option of last resort not necessarily because of any moral reluctance, but simply because of poor initial strategic assessments.

Organisations that turn to terrorism are weak, according to Crenshaw, because they lack popular support for their project – in the typical case, the overthrow of a national government or establishment of a sovereign national homeland. This weakness, in turn, could be caused by the limited appeal of an extremist organisation’s beliefs, or by its inability or reluctance to engage in the slow and difficult process of mobilising the masses, a process made even more difficult under authoritarian regimes that censor the media and harshly punish dissidents. Impatience, the perception of a sudden government vulnerability, or a change in the international climate, could help precipitate the decision to turn to terrorism.¹⁶⁷

If terrorists or potential terrorists are indeed rational actors, they must consider the costs and benefits of adopting terrorism. The costs could be very high. Not only does terrorism “invariably invite a punitive government reaction,” by causing civilian deaths it can also alienate potential supporters, both domestic and international.¹⁶⁸ Crenshaw does point out, however, that the risk of alienating domestic supporters is least when the conflict is framed in terms of an ethnic conflict “where victims can be clearly identified as the enemy and where the government of the majority appears illegal to the minority.”¹⁶⁹

¹⁶⁶ Martha Crenshaw “Strategic Logic” *op. cit.*, p. 493

¹⁶⁷ *Ibid.*, pp. 495 - 496

¹⁶⁸ *Ibid.*, p. 498

¹⁶⁹ *Ibid.*, p. 498

Crenshaw also remarks that terrorism has an “extremely useful agenda setting function.”

If the reasons behind violence are skillfully articulated, terrorism can put the issue of political change on the public agenda. By attracting attention it makes the claims of the resistance a salient issue in the public mind. The government can reject but not ignore an opposition’s demands.¹⁷⁰

In general, she says that

The reasoning behind terrorism takes into account the balance of power between challengers and authorities, a balance that depends on the amount of popular support the resistance can mobilize. The proponents of terrorism understand this constraint and possess reasonable expectations about the likely results of action or inaction. They may be wrong about the alternatives that are open to them, or miscalculate the consequences of their actions, but their decisions are based on logical processes.¹⁷¹

How much do these arguments apply to al Qa’ida? First of all, we should acknowledge the many differences between al Qa’ida and the kinds of groups that Crenshaw was describing. Al Qa’ida is neither separatist nor nationalist except, perhaps, in the loosest possible meanings of the terms. Its goals are not the creation of a national homeland in the usual sense, and while some of its aims are clearly revolutionary, they are not limited to the overthrow of a single government nor confined to a single state.

Nonetheless, al Qa’ida has some of the characteristics of other terrorist organisations. It is weak, in that it is clearly incapable of mounting any form of conventional war against its enemies, such as the United States. It does not appear to have mass support in any state or region, although anti-American and, possibly, anti-Western sentiment throughout the Muslim world appears to be spreading and hardening since the invasion of Iraq. The latter was a particularly happy event for al Qa’ida because it allowed it to tap yet further into a deep, powerful, and longstanding Arab resentment of Western ‘Crusaders’, imperialists, and colonizers, and Jews. While it is not nationalist in

¹⁷⁰ *Ibid.*, p. 498

¹⁷¹ *Ibid.*, p. 500

the traditional sense, al Qa'ida's campaign to expel foreign forces from Arabia appeals to a kind of pan-Arabic nationalism and ethnic identity that it sees as having been offended by the creation of artificial states and boundaries under Western colonial rule or high-handed post-World War dispensations. Al Qa'ida's struggle against 'the West' has also always had strongly ethno-religious content – the West versus the Arabs, the Christian Crusaders and Jews versus the Muslims – and the organisation is explicitly anti-Semitic.

An international survey conducted a year after the invasion of Iraq showed the depth of resentment against the United States and some popular support for elements of al Qa'ida's program and its leadership.

In the predominantly Muslim countries surveyed, anger toward the United States remains pervasive, although the level of hatred has eased somewhat and support for the war on terrorism has inched up. Osama bin Laden, however, is viewed favorably by large percentages in Pakistan (65%), Jordan (55%) and Morocco (45%). Even in Turkey, where bin Laden is highly unpopular, as many as 31% say that suicide attacks against Americans and other Westerners in Iraq are justifiable. Majorities in all four Muslim nations surveyed doubt the sincerity of the war on terrorism. Instead, most say it is an effort to control Mideast oil and to dominate the world. ... Moreover, while large majorities in Western European countries opposed to the war say Saddam Hussein's ouster will improve the lot of the Iraqi people, those in Muslim countries are less confident. In Jordan, no less than 70% of survey respondents think the Iraqis will be worse off with Hussein gone.¹⁷²

Al Qa'ida portrays itself as fighting the enemies of Islam wherever in the world they might be found, which increases its relative weakness. Indeed, al Qa'ida has aligned itself against a wider array of specific enemies than, probably, any militant group before them. They include the United States and its allies, especially Great Britain, the governments of Saudi Arabia, Egypt and various other Arab states, Israel, and the United Nations. Its political goals, as repeatedly stated by Osama bin Laden in his 'fatwas' and

¹⁷² "A Year After Iraq War: Mistrust of America in Europe Ever Higher, Muslim Anger Persists" The Pew Research Center for the People and the Press, March 16, 2004. (<http://people-press.org/reports/display.php3?ReportID=206>) See also "About this Survey" The Pew Research Center (<http://people-press.org/reports/display.php3?PageID=797>)

other writings, interviews, and video and audio tapes,¹⁷³ are correspondingly grandiose. They include:

- The withdrawal of all American and Western military forces from the Middle and Near East, especially Saudi Arabia (“the land of the two holy places”), Iraq, and Afghanistan
- An end to American support for Israel and the eventual extinction of Israel itself
- The overthrow of Arab governments deemed corrupt or secularised, with a particular emphasis on the Saudi Arabian monarchy
- The creation of a single pan-Arabian Muslim state in the Middle East state under a renewed Caliphate

Given the enormous scale of al Qa’ida’s project, it is not surprising that it moved more or less directly to terrorism. Clearly, no nonstate actor – nor state actor, for that matter – could mount a meaningful guerilla or conventional war against the United States, let alone the rest of the targets, regardless of the strength of its popular support.

Although they have always directed some effort towards gaining Muslim support for their actions, with most of the messages from al Qa’ida’s leadership being as much rousing calls to their perceived constituency as they are threats to their enemies, the organisation seems to have been generally content to have God, as they believe, on their side without feeling the need to move into an explicitly political role of mass mobilization. In any case, as we saw above, a good deal of al Qa’ida’s political work has been done for it by the United States and its allies. Furthermore, al Qa’ida’s theology holds that anyone who opposes them cannot be a true Muslim and is therefore either irrelevant or an actual enemy, one of the Kufr, and it seems to feel no particular need to make converts. “You’re either with us or you’re against us” apparently applies equally well on both sides of the war against terror.

¹⁷³ For an excellent compilation of academic writings on al Qa’ida and source documents by bin Laden and others, see “The War on Terrorism: Osama bin Laden and al-Qa’ida” by the Joyner Library Academic Library Services, East Carolina University, at <http://www.lib.ecu.edu/govdoc/terrorism.html>.

Al Qa'ida's actions have had a powerful, indeed world-changing, agenda-setting effect, in Crenshaw's terms, so that even if al Qa'ida does not undertake any particular political activities in support of its cause, no Muslim – or almost anyone else, for that matter – is ignorant of its actions or fails to hold an opinion about them.

On the one hand, al Qa'ida's strategy can be seen, in a sense, as one of attrition, as an attempt to raise the costs of Western involvement in the Middle East to unacceptable levels. For example, it could be argued that the train bombings in Madrid on March 11, 2004, had precisely this effect. Within days of the attacks, which “have been firmly attributed to Islamic extremists by Spain's public prosecutor” and for which “a Moroccan cell with links to al-Qaeda claimed responsibility,” Spain's right-wing government was ousted in a scheduled election and replaced by a socialist party that moved quickly to withdraw Spanish troops from Iraq and end the country's support for the U.S.-led coalition.¹⁷⁴

It could be argued that al Qa'ida terrorism is having a similar effect in the United States, in that two years after '9/11' many people saw a causal relationship between American behaviour in the Middle East and terrorist violence.

Sixty-four percent said that US military presence in the Middle East increases rather than decreases the likelihood of terrorist attacks against the US, and 64% think that the US should reduce its military presence there over the next 5-10 years. Fifty-eight percent said that “The US is playing the role of world policeman in the Middle East more than it should be. A very strong majority believes that reactions to US foreign policy in the Islamic world are creating conditions that make it easier for terrorist groups to grow. Sixty-five percent perceive that in the Islamic world since September 11, feelings toward US foreign policy have grown worse, and 73% think that the majority of people there share many of al-Qaeda's feelings toward the US. An overwhelming 77% believes that “when there are widespread negative feelings in the Islamic world toward US foreign policy...this creates a climate in

¹⁷⁴ No author credited, “Madrid remembers train bombings” BBC News World Edition, March 11, 2005 (<http://news.bbc.co.uk/2/hi/europe/4338727.stm>)

which it is easier for terrorist groups to recruit new members and raise funds.¹⁷⁵

Although a single survey should be treated with caution, this is at least suggestive evidence that al Qa'ida's strategy is indeed succeeding, to the extent that large numbers of Americans believe that the American presence in the Middle East increases the threat of terrorism and therefore believe, by inference, that an American withdrawal would diminish the threat. If that is the case, then al Qa'ida might believe that more frequent and damaging attacks would intensify this tendency. They might even believe that another catastrophic attack, perhaps using a nuclear weapon, would catalyse an overwhelming domestic demand for the U.S. to completely withdraw from the Middle East.

This would be a risky calculation. American policy makers have often been inclined to seek military solutions to foreign policy problems; under the present Bush administration that tendency has become even more pronounced. Add to this the immediate drive for vengeance that would arise in both public and government circles and it becomes hard to imagine a massive terrorist attack leading to American disengagement and neoisolationism, at least in the short term. In the longer term, however, the cost/benefit analysis might well swing towards disengagement as American perceptions of their interests in the region shift relative to the continually accumulating costs of protecting them. On this kind of calculation, a steady stream of lower-level attacks might serve al Qa'ida's interests better than less frequent but more lethal and dramatic incidents.

There is another strand to al Qa'ida thinking, however, that must be accounted for. Al Qa'ida might be a militant organisation with a set of explicit political goals and therefore at least the potential for a rational strategy, but it is also a religious terrorist group. As we have seen, religious beliefs may allow terrorists to ignore conventional moral constraints against killing while also modifying or supplanting the more typical

¹⁷⁵ Steven Kull "War on Terrorism Has Not Made Public Feel safer [sic]" PIPA/Knowledge Networks, September 9, 2003 (<http://www.pipa.org/OnlineReports/Terrorism/PressRelTerr9.03.pdf>) Press release for poll "Americans On Terrorism: Two Years After 9/11" PIPA/Knowledge Networks, September 9, 2003 (<http://www.pipa.org/OnlineReports/Terrorism/FindingsTerr9.03.pdf>)

rationales for terrorism. In fact, it is frequently suggested that the killing of ‘infidels’ for its own sake is a positive religious duty, in al-Qa’ida’s view. If this was or became the dominant mode of thinking among al-Qa’ida’s leadership, then there would be no reason, other than the potential costs to itself in terms of retaliation, loss of national hosts or sponsors, and so forth, for the organisation not to use nuclear or other WMD if they were to obtain them. If religion dominated politics in al-Qa’ida’s thinking, we would have to ask whether it actually had a strategy in the commonly accepted sense: does it make sense to call killing infidels a political goal? Should we accept Laqueur’s description of terrorism as “fanatical violence” born of “sheer bloodlust”?¹⁷⁶

Not even al-Qa’ida, however, frames the call to kill Americans and its other enemies in a political void. In the 1998 ‘fatwa’ the notorious ruling that “to kill the Americans and their allies – civilians and military – is an individual duty for every Muslim who can do it in any country in which it is possible to do it” is immediately followed by the less often quoted and explicitly political qualification “in order to liberate the al-Aqsa Mosque [in Jerusalem] and the holy mosque [the Ka’aba in Mecca] from their grip, and in order for their armies to move out of all the lands of Islam, defeated and unable to threaten any Muslim.”¹⁷⁷ The document lists three reasons for attacking America: the “occupation” of the Arabian Peninsula; the “great devastation inflicted on the Iraqi people;” and the American wars in the region to “serve the Jews’ petty state,” to “destroy Iraq,” and to “fragment all the states of the region such as Iraq, Saudi Arabia, Egypt, and Sudan into paper statelets and through their disunion and weakness to guarantee Israel’s survival and the continuation of the brutal crusade occupation of the Peninsula.”¹⁷⁸

¹⁷⁶ Walter Laqueur “Terror’s New Face”, *op. cit.* p. 165

¹⁷⁷ Shaykh Usamah Bin-Muhammad Bin-Ladin Ayman al-Zawahiri, amir of the Jihad Group in Egypt; Abu-Yasir Rifa’i Ahmad Taha, Egyptian Islamic Group; Shaykh Mir Hamzah, secretary of the Jamiat-ul-Ulema-e-Pakistan; Fazlur Rahman, amir of the Jihad Movement in Bangladesh “Jihad Against Jews and Crusaders: World Islamic Front Statement” 23 February 1998, reproduced by the Federation of American Scientists (<http://www.fas.org/irp/world/para/docs/980223-fatwa.htm>)

¹⁷⁸ *Ibid.*

Al Qa'ida published its religious justification for the '9/11' attacks in April, 2002, in a little-known document entitled "A Statement from Qaidat al-Jihad Regarding the Mandates of the Heroes and the Legality of the Operations in New York and Washington." Although it "was not published by Arabic or Western newspapers and has largely been ignored by experts," it "provides essential insights into the movement's religious rationale for September 11."¹⁷⁹ In the document, al Qa'ida's apologists argue that the organisation was fighting a defensive war against America and its allies.

Truly, America is not, nor has it ever been, a land of treaty or alliance. If we were to line up with the other side and say that it is a land of peace, we would say that it has turned into a land of war. That occurred with its violation of the treaty and its help to the Jews for more than fifty years in occupying Palestine, banishing its people, and killing them. It is a land of war that violated its treaty when it attacked and blockaded Iraq, attacked and blockaded Sudan, attacked and blockaded Afghanistan. It has oppressed Muslims in every place for decades and has openly supported their enemies against them.¹⁸⁰

The statement lists seven justifications for killing the "protected people" – women, children, and the elderly – who died in the attacks. They include reciprocity, "[i]f the unbelievers have targeted Muslim women, children, and elderly, it is permissible for Muslims to respond in kind"; cases "in which it is not possible to differentiate the protected ones from the combatants or from the strongholds"; and instances where "the protected ones have assisted in combat, whether in deed, word, mind, or any other form of assistance."¹⁸¹ A further condition is particularly relevant to our present topic, although there is no way of knowing whether nuclear or other WMD were in the writer or writers' minds: "Fifth: It is allowed for Muslims to kill protected ones among unbelievers when

¹⁷⁹ Quintan Wiktorowicz and John Kaltner "Killing in the Name of Islam: Al-Qaeda's Justification for September 11" *Middle East Policy Council Journal*, Vol. X, Summer 2003, No. 2 (http://www.mepec.org/public_asp/journal_vol10/0306_wiktorowicz Kaltner.asp)

¹⁸⁰ "A statement from qaidat al-jihad regarding the mandates of the heroes and the legality of the operations in New York and Washington" translated by *Middle East Policy Council Journal*

¹⁸¹ *Ibid.*

they are using heavy weapons that do not distinguish between combatants and protected ones, as the Prophet did in Taif when he attacked its people with catapults.”¹⁸²

What is striking about this document is that it was most probably issued to address concerns among al Qa'ida's constituency and membership, those it considered 'true' Muslims, because by its own logic al Qa'ida should have felt no need to justify itself either to the Christian and Jewish enemies nor to those it considered pseudo or apostate Muslims. If that is the case, if an attack that killed a small fraction of the numbers that would die in even a small nuclear blast required an apologia from an organisation that has always seemed arrogantly assured of the moral rectitude of its actions, there is clearly the possibility of a backlash from within its own ranks were it to carry out an even deadlier attack, whether by WMD or some other means.

It may, on the other hand, have merely been a cynical and, given its brevity, even a somewhat off-hand *post facto* attempt to provide a religious exculpation for acts that the majority of Muslims would have found unacceptable. And it may have been a genuine expression of belief. Whatever the case, this and other documents do suggest that al Qa'ida does not kill infidels simply for killing's sake.

Al Qa'ida has a clear political agenda, it perceives itself to be fighting a defensive war against an alien aggressor, and it is sufficiently conscious of moral objections to the killing of noncombatants, especially 'protected people,' to seek religious authorization and justification for its acts. It is therefore fair to say that it is not simply engaging in mass casualty terrorism as a kind of crude religious crusade of its own. In other words, if al Qa'ida won its struggle with America, if the U.S. were to withdraw its troops from the Middle and Near East and ceased its support for Israel and Arab governments deemed illegitimate by al Qa'ida, it is likely that the organisation would stop attacking Americans. However, it would continue its campaign for a unified Arabia, a restored Caliphate, and a revitalized Islam.

Finally, we might consider the questions of Al Qa'ida's ethos and its leaders' psychology. If bin Laden is indeed the malignant narcissist that has been suggested, he

¹⁸² *Ibid.*

might feel driven to make ever more impressive demonstrations, beyond anything a strictly rational strategy might require, of his power and reach. In that case, the next obvious step, the only thing that would succeed in this competition with himself, would be an even more lethal attack than '9/11,' and that would probably entail the use of WMD, if not necessarily a nuclear weapon. However, I am not convinced that bin Laden's personality is such that he would subordinate strategy to personal goals, nor that he would be allowed to pursue such a costly, difficult, and risky project if the rest of the leadership were not convinced of its value. (This does, of course, point up the importance of the core leadership in a nuclear terrorism project. For any number of reasons, it would have to be approved, financed, and directed by the highest levels.)

How should we assess the likelihood that al Qa'ida would use a nuclear weapon? Mass casualty terrorism has shown few signs of expelling the U.S. from the Middle East so far, although the survey results quoted above and some other evidence suggest the tide of American political opinion may be turning, if slightly and slowly, towards disengagement. Al Qa'ida is 'in it for the long haul'. It is evidently quite ready to continue its campaign, which after all has roots that stretch back to the Crusades almost a millenium ago, for decades if necessary. Although the organisation would rightly expect the use of a nuclear weapon to precipitate an unprecedented international effort to eradicate it, with this sort of time horizon it might also believe that it could survive the onslaught while it waited for the dramatically increased costs of involvement in the Middle East to lead to changes in American policy. If, however, a nuclear attack were likely to alienate core supporters because of the massive toll of 'protected people' that almost any nuclear scenario would entail, the organisation might indeed be more constrained against truly massive attacks than our initial analysis of religious terrorism suggested.

Chapter 6: Conclusion

When I decided to address the question of whether terrorists would go nuclear, I set myself an all-but impossible task. If one discounts the argument that the two instances of atomic bombing in the second World War were state nuclear terrorism, there are no cases to study and no historical evidence to unearth. Neither terrorists nor those who fight them, especially secret or secretive specialised governmental counter-terrorism agencies, are particularly prone to disseminating credible, concrete information in the public realm. While we can do our best to understand, even empathise with, terrorists in order to come to some sort of roughly plausible approximation of their moral, strategic, and political beliefs, in the end we are forced to resort to ‘what-if’ and ‘best-guess’ thinking: speculation, in a word (which places this thesis firmly in the tradition of at least some of the scholarship that has preceded it).

Nonetheless, there is a considerable amount of evidence that must inform this speculation and narrow its range. First of all, there are technical considerations. While they were not dealt with in any detail in this paper, they must be acknowledged. Assembling enough fissile material for even the crudest nuclear device – and the amounts needed varies inversely with the sophistication – would be very difficult and probably extremely expensive for a terrorist organisation. The theoretical knowledge and practical skills required to design and build a nuclear weapon are of a high order, while setting up, equipping, and successfully operating an undetectable clandestine weapons laboratory would also be so difficult and expensive as to be virtually prohibitive, even for the best-funded terrorist organisation. The Aum Shinrikyo, which operated relatively openly under Japanese laws regarding religious organisations that made it all-but untouchable and had a billion-dollar war chest, gave up the attempt to develop a nuclear weapon very early on in the process, preferring to work with chemical and biological agents instead.

The evidence, much of it admittedly negative, suggests that buying or stealing a functional nuclear weapon would be an even more difficult, perhaps impossible, task. Nuclear weapons are guarded like national treasures; indeed, it is fair to say that for new nuclear weapons states, including potential rogues, their nuclear weapons *are* national

treasures, symbols of national strength and modernity bought at immense cost, that they would be most unlikely to hand over to terrorists unless the terrorists were acting as mercenary agents of the state itself.¹⁸³ And the threat of nuclear retaliation, even if the possibility of tracing the weapon back to its source were thought to be low, should be enough to deter any rational state from using a nuclear weapon against another nuclear weapons state or one under the protection of a nuclear weapons state.

Leaving aside the technical issue, there remains the question of whether terrorists would use nuclear weapons if they somehow managed to obtain them. Terrorist organisations vary between themselves at least as much as any other set of broadly comparable human institutions – religions, for example, or tribes. In other words, they have different goals, different histories, different leaderships and leadership styles, different cultural roots, different political contexts, different sets of moral beliefs and constraints, and different strategies. Nonetheless, we were able to distinguish several broad categories of terrorist organisation, such as social revolutionary, nationalist/separatist, and religious.

Of these types, we would suggest that apocalyptic religious or cultist terrorists are the most dangerous, from a purely motivational and strategic viewpoint. These organisations believe they have a direct divine mandate. As such, they recognise no secular legal or moral constraints on their actions nor do they answer to an earthly constituency, while the promise of immediate heavenly reward means that self-preservation itself has no value, voiding any possibility of deterrence. Their political agendas, to the extent that they have any, are typically both vague and grandiose; in the most threatening form, they believe that human civilisation itself must be destroyed so that a new order, typically populated or led by members of the cult, can emerge.

With the Aum Shinrikyo the world probably came as close as it ever has to true nuclear terrorism. At the moment, we know of no other cult that has approached the wealth and technical resources of an Aum Shinrikyo, but any apocalyptic cult poses a

¹⁸³ As we noted earlier, the most egregious known example of clandestine nuclear trade, the A.Q. Khan network, did not deal in weapons or fissile materials.

threat to the security of its host state and, eventually, the world, that increases as it amasses wealth and power. Religious groups have not traditionally attracted as much attention from security agencies as more typical terrorist organisations.¹⁸⁴ while the fight against terrorism must be very carefully balanced against the need to respect civil rights, including religious freedom, we hope that the lesson of Aum Shinrikyo has been taken to heart.

The next most dangerous form of terrorism is the religiously inspired transnational variety uniquely exemplified by al Qaeda. While al Qaeda is not apocalyptic and has more narrow and better-defined political goals than a cult such as Aum Shinrikyo, it has some characteristics of a purely religious terrorist group. Specifically, it claims a religious justification for its actions and says that killing its enemies, which it generically calls 'infidels', is not only not immoral, it is a positive religious duty that will be rewarded in the hereafter, and it has tragically demonstrated its practical and psychological ability to engage in mass casualty terrorism. Unlike cults, however, al Qaeda does have a broader constituency beyond its membership that it relies upon for support and towards whom it appears to feel at least some moral obligations. It locates its struggle in the concrete world of real political actors, not in a more abstract spiritual realm, the outcomes it desires are equally concrete, and to the extent that it engages in strategic thinking it does so in response to the configurations and dynamics of power in the real world.

Al Qaeda, therefore, is not as utterly unconstrained from mass casualty terrorism as an Aum Shinrikyo might have been. At the same time, however, the risks of its using nuclear weapons is considerably higher than that of some other types of terrorist organisation. Al Qaeda can easily differentiate, on ethnic grounds, its target populations from those on whose behalf the organisation claims to be acting. Its potential targets for nuclear terrorism are far from its heartlands in the Middle and Near East, and the chances of killing significant members of its core constituency in such an attack are very low.

¹⁸⁴ Except, of course in authoritarian countries, where religious groups have been persecuted as 'threats to state security' because of their perceived threat to the ruling ideology.

Finally, it might believe that its transnational nature would provide a level of immunity to retaliation, hence its alleged undeterrability.

Nationalist/separatist terrorists are, on the whole, less likely than a group such as al Qaeda to engage in nuclear terrorism. In these cases, the terrorists are acting on the claimed behalf of a clearly-defined, relatively small constituency on whom they depend not only for material support but also for whatever legitimacy they might have. They would therefore be significantly constrained against mass casualty terrorism to the extent that their constituency harboured moral or other objections, such as the fear of retaliation, to it. Groups such as these frequently rely on overt or covert sponsorship by states, although state support for terrorism has declined significantly in recent years with the end of the Cold War and the attempts by states such as Libya to rehabilitate themselves in the international community. Nonetheless, if this sponsorship existed it could be another powerful source of constraint. Finally, in these cases the claimed national homeland is by definition a part of the target state and the target and constituent populations either live close together or are actually comingled, which would be another check on the use of weapons of mass destruction, which are indiscriminate by their nature.

Having said that, there are cases in which these constraints, both moral and tactical, would not apply as strongly, and possibly not at all. Chechen separatists consider themselves oppressed by Russian imperialists and colonizers whose 'headquarters', Moscow, is more than a thousand kilometres away from Chechnya, and the two populations are quite distinct. Chechnya has been massively victimised in two recent wars to repress separatism, while the Chechens have never truly acceded to Russian rule and anti-Russian sentiment runs deep, suggesting that the broad Chechen population might be inured to violence and have few inhibitions against killing Russians in large numbers. There is an alliance of some sort between those Chechen separatists led by Shamil Basayev and al Qaeda, although it is hard to say whether this is a marriage of convenience or reflects true jihadi Salafist sentiments among the separatists. Whatever the case, Basayev's organisation has a consistent record of taking very large numbers of hostages in incidents that have ended with correspondingly large numbers of casualties (although these have chiefly been at the hands of Russian forces).

All these factors, which would seem to point to a higher risk of nuclear terrorism, must, however, be balanced against the fact that, unlike transnational jihadists, nationalist/separatist terrorists have distinct homelands and population bases that would be vulnerable to retaliation. In the case of a Chechen nuclear attack on a Russian target, for example, nuclear retaliation against Chechnya would be a virtual certainty.

And then there are the potential wild cards in our pack: actors such as single-issue, right-wing extremist, or ideological revolutionary terrorists. Groups such as these are often small, mobile, and little-known, and might be peculiarly prone to developing apocalyptic ideologies and cult-like behaviour. With the present massive international focus on al Qa'ida and its affiliates, there is a real risk of their developing some form of WMD capability while being almost completely ignored by security agencies. It is extremely unlikely that such small groups could obtain true nuclear weapons, but the risks of their using radiological devices could be high.

Finally, we must remember that terrorists, with the possible exception of al Qa'ida, are not known for great tactical innovation. The traditional tools of terrorism – hostage taking, bombing, shoot and run sniper attacks, and so forth – have only relatively recently been expanded to include the use of suicide bombers, and even that is really only a particularly unpleasant and vicious variation on an older theme. Terrorists in general probably share the same ignorance and fear of WMD prevalent in the broader population and likely see no reason to turn to unknown, possibly unpredictable, and certainly dangerous substances and techniques when the older tactics have proven to be simple, reliable, and cheap – or so, at least, we hope.

Appendix A: Selected Militant Organisations and the Nuclear Threat

In this section we will discuss some of the larger and better known groups that might be seen as potential nuclear terrorists.

Hamas (Islamic Resistance Movement, acronym for *Harakat al-Muqawamah al-Islamiyya*)

Hamas, like Hezbollah (below) is one of the largest and best-known militant Muslim organisation in the Middle East. It operates among Palestinians, with particularly strong support among those living in Gaza and the West Bank. Its short-term goal is Israel's complete withdrawal from occupied Palestinian territories, while its long-term goal is the establishment of a Palestinian state in the territory designated as Palestine before Israel was established. It has two wings: the social and political wing "is involved in building schools and hospitals in the West Bank and the Gaza Strip, and in helping the community in social and religious ways,"¹⁸⁵ while its military wing, the Palestinian Holy Fighters (*Al-Majhadoun Al-Falestinioun*), which includes the 'hit squads' known as the *Izz Al-Din Al-Qassam* Battalions or Brigades, has been engaged in a bloody struggle with Israel since the beginning in 1987 of the first Palestinian intifada, or uprising. Hamas "defines the transition to the stage of Jihad 'for the liberation of all of Palestine' as a personal religious duty incumbent upon every Muslim."¹⁸⁶ Hamas was headquartered in Jordan before its headquarters were closed down and its leadership expelled to Qatar by King Hussein's successor, King Abdullah.¹⁸⁷

¹⁸⁵ Kathryn Westcott, "Who Are Hamas?" *BBC News Online*, 19 October, 2000 (http://news.bbc.co.uk/1/hi/world/middle_east/978626.stm)

¹⁸⁶ No author or date given, "Hamas (Islamic Resistance Movement)," *International Policy Institute for Counter-Terrorism* (<http://www.ict.org.il> – framed page, more specific URL not possible.)

¹⁸⁷ Westcott, "Hamas," *ibid.*

The Israeli newspaper *Haaretz* said that of the 100 Palestinian suicide bombers targetting Israel between 1993 and April 16, 2004, 66 belonged to Hamas.¹⁸⁸ Hamas has been designated as a foreign terrorist organisation by the U.S. State Department,¹⁸⁹ while the Israeli International Policy Institute for Counter-Terrorism called Hamas “currently the strongest opposition group to the peace process”¹⁹⁰.

Gary Ackerman and Laura Snyder suggest that while such a large and “developed” organisation might be constrained from using nuclear or radiological weapons by an awareness of the political and physical damage that it might suffer, there was still a possibility that “an isolated cell might commandeer WMDs and use them without the approval of the group’s leadership”.¹⁹¹ Furthermore, they say, Hamas might be tempted to use WMDs if they believed that Israel had used unconventional arms against Palestinians. They list a number of indications, including a number of alleged plots reported in the news media, that Hamas was working on various chemical weapons and point out that the CIA claimed, in 2000, that Hamas was “working towards WMD capability”.¹⁹² In a report on WMD terrorism for 2002, Wayne Turnbull and Praveen Abhayaratne said that Hamas had been responsible for four out of five instances of “uses, possessions, attempted acquisitions, plots, and threats with possession of an agent(s)” in the Middle East and North Africa.¹⁹³

Hamas has a relatively well-educated and sophisticated membership that includes “many senior members [who] have graduate degrees in engineering, chemistry, physics,

¹⁸⁸ Amos Harel “The 100th Suicide Bomber,” *Haaretz.com*, April 16, 2004 (<http://www.haaretzdaily.com/hasen/pages/ShArt.jhtml?itemNo=80841>)

¹⁸⁹ U.S. Department of State “Fact Sheet: Foreign Terrorist Organisations” May 23, 2003 (<http://www.state.gov/s/ct/rls/fs/2003/12389.htm>)

¹⁹⁰ “Hamas (Islamic Resistance Movement),” *International Policy Institute for Counter-Terrorism*, *op. cit.*

¹⁹¹ Gary Ackerman and Laura Snyder “Would They If They Could?,” *op. cit.* See also “Statement by Director of Central Intelligence George J. Tenet Before the Senate Select Committee on Intelligence on The Worldwide Threat in 2000: Global Realities of Our National Security,” Central Intelligence Agency, 2 February 2000 (http://www.odci.gov/cia/public_affairs/speeches/2000/dci_speech_020200.html)

¹⁹² Ackerman and Snyder, *ibid.*

¹⁹³ Wayne Turnbull and Praveen Abhayaratne “2002 WMD Terrorism Chronology: Incidents Involving Sub-National Actors and Chemical, Biological, Radiological, and Nuclear Materials” *Center for Nonproliferation Studies / Monterey Institute of International Studies*, 2003, p. 2 (<http://cns.miis.edu/pubs/reports/pdfs/cbrn2k2.pdf>)

and medicine”¹⁹⁴ and it is supported by Iran, so there would probably be little difficulty in assembling the expertise necessary to develop certain WMDs if Hamas decided to move in that direction. However, it is not clear whether Hamas has any particular interest in nuclear or radiological weapons, and there are good reasons to doubt that they would be willing to use them, Ackerman and Snyder’s arguments notwithstanding. First of all, the organisation, focused as it is on Palestinians and their conflict with Israel, does not appear to have the same anti-Western jihadist mentality as some other Muslim groups (although it has declared its struggle for a Palestinian state to be a jihad), nor does it seem to share their wish to establish a pan-Arabic Muslim state under a restored Caliphate. Secondly, Israel has a deserved reputation for disproportionate retaliation for attacks against itself, as shown by the approximately three to one ratio of Palestinian to Israeli dead in the chronic, low-intensity fighting of recent years.

Although one can only speculate as to how Israel might react if Hamas or another group were to employ radiological or nuclear weapons against it, there can be no doubt, and there is surely no doubt in the minds of Hamas’s leaders, that retaliation would be swift, overwhelming, and massively lethal. It would be an extremely foolish organisation that used WMDs against an undeclared, but undisputed, nuclear weapons state¹⁹⁵ and the region’s most powerful conventional force. Under the circumstances, Hamas, like the other anti-Israeli groups, can be expected to continue its strategy of attrition by suicide bomber in the hope that international opinion will eventually turn against Israel.

Hezbollah (**Party of God, Hizb’allah, Hizbollah, etc**)

Like Hamas, Hezbollah is a large and complex organisation with political, social, and military wings. It has considerable conventional military strength, for a non-state organisation. It is supported by both Iran and Syria, and is represented in the Lebanese

¹⁹⁴ Ackerman and Snyder, *op. cit.*

¹⁹⁵ There are obvious problems with Israel actually using its nuclear weapons, especially against the Palestinians. On a crudely self-interested level, fallout could easily reach Israeli territory, while on a slightly less crude, but still self-interested level, the international fallout from a nuclear attack on Palestinians, even if they had used WMDs against Israel, could be devastating. A restrained but proportionate response, on the other hand, would redound to Israel’s credit, although Israel’s oft-demonstrated indifference to international opinion and the lives and welfare of Palestinians leaves the question moot.

national assembly. Hezbollah is widely credited in the Arab world for having forced Israel to retreat, in 2000, from the southern Lebanese territories it had occupied in 1982. It was that Israeli invasion that had prompted Iran to fund the new resistance group. Hezbollah, which has a largely Shi'a membership, is now a "mainstream political party"¹⁹⁶ that runs medical clinics and has its own TV station. It was recently described as "a movement with thousands of trained guerrillas, members of parliament and a dynamic welfare programme benefiting thousands of Lebanese"¹⁹⁷.

Like Hamas, Hezbollah denies Israel any right to exist and its rhetoric turns on Israel's total destruction and the return of Israeli territory to the Palestinians. Again like Hamas, it seems to have little interest in the grander designs of jihadist militant Muslim groups, although, as we note below, there have been suggestions of links with al Qa'ida. It has been accused of complicity or active participation in the kidnappings of foreigners in the 1980s and 90s, in the suicide bombings of the U.S. embassy and marine barracks in Beirut in 1983, and in the assassination of two American captives, an army colonel and the head of the CIA's operations in Lebanon. By one account, Hezbollah has sent ten suicide bombers against Israeli targets since 1993, but another source claims the figure is fifteen.¹⁹⁸

The U.S. State Department still designates it a foreign terrorist organisation, although it is now apparently trying to recast itself, under American pressure delivered via Syria, as a purely defensive organisation.¹⁹⁹

Hezbollah has been known to use chemical weapons,²⁰⁰ if tear gas is taken to be one, and there have been suggestions that it was interested in other chemical agents,

¹⁹⁶ Hugh Sykes, "New Era for Hezbollah," *BBC News Online*, 5 March, 2004 (http://news.bbc.co.uk/1/hi/world/middle_east/3538151.stm)

¹⁹⁷ Kathryn Westcott, "Who Are Hezbollah?" *BBC News Online*, April 4, 2002

¹⁹⁸ Harel, "100th Suicide Bomber," *op. cit.* Schbley ("Defining Religious Terrorism" *op. cit.*) claims to have viewed the videotaped wills of 15 successful Hezbollah suicide bombers.

¹⁹⁹ Sykes, "New Era," *ibid.*

²⁰⁰ Cf. Jason Pate, Gary Ackerman, and Kimberley McCloud "2000 WMD Terrorism Chronology: Incidents Involving Sub-National Actors and Chemical, Biological, Radiological, or Nuclear Materials," Center for Nonproliferation Studies, 2004 (<http://cns.miis.edu/pubs/reports/cbrn2k.htm>)

including cyanide and ‘nerve gas’,²⁰¹ although these incidents relate to support for Hamas efforts, rather than to Hezbollah activity *per se*. There have been suggestions that Hezbollah has links, such as the sharing of logistics and training, with al Qa’ida, even though Hezbollah is Shi’ite and al Qa’ida is predominantly Sunni.²⁰² Hezbollah’s spiritual leader, Sheikh Muhammad Hussein Fadlallah, publicly condemned the 9/11 attacks as “incompatible with Islamic law and perversions of the true meaning of *jihad*”.²⁰³

As with Hamas, it is not clear whether Hezbollah has any active interest in obtaining radiological or nuclear weapons. Item 30 of Schbley’s profile, above, suggests that Hezbollah militants might not be willing to use weapons of mass destruction, even if they had them. This may not be true of the leadership but, as noted with reference to Hamas, one would be seriously misguided if he deployed WMDs against such a powerful state as Israel, given that country’s propensity for disproportionate retaliation for even relatively minor attacks.

Palestinian Islamic Jihad (PIJ, Harakat al-Jihad al-Islami al-Filastini)

This relatively small and somewhat mysterious Sunni Muslim anti-Israeli organisation was founded in Egypt in the late 1970s by three Palestinian students who, despite their own religious affiliations, were impressed by the Shi’ite Islamic revolution in Iran under the Ayatollah Kohmeini. They felt that the destruction of Israel and the ‘liberation’ of Palestine was a precondition for the unification of the Arab and Muslim world. They were expelled from Egypt for complicity in the assassination of President Anwar Sadat in 1981 and moved to the Gaza Strip, where the PIJ operated independently of, and to some extent as a rival to, Hamas until 1994, when it began to cooperate with Hamas on some operations after the latter adopted suicide bombing.

The PIJ maintained close relations with the Iranian Revolutionary Guards stationed in Lebanon and with Hezbollah. It has offices in Beirut, Damascus, Tehran and

²⁰¹ Turnbull and Abhayaratne “2002 WMD Terrorism Chronology,” *op. cit.*, pp. 12, 14

²⁰² Cf. Council on Foreign Relations “Hezbollah,” 2004 (<http://cfrterrorism.org/groups/hezbollah2.html>)

²⁰³ Council on Foreign Relations, *ibid.*

Khartoum, but concentrates its efforts in the Gaza Strip and Lebanon. One source claims that while it had only 250 members at the beginning of the first intifada, “the organization grew considerably in the 1990s and sympathizers are believed to number in the thousands”.²⁰⁴ However, it is not thought to be a threat to Hamas’s predominance in Gaza.

The group, including its various factions, is said by one source to have been responsible for the deaths of at least 50 Israelis,²⁰⁵ while another claims that it has been responsible for “scores” of terrorist attacks since 2000, with the deaths of 25 Israelis and injuries to 400.²⁰⁶ Despite its relatively small size, Islamic Jihad is said to have sent 34 of 100 Palestinian suicide bombers against Israeli targets between 1993 and April 16, 2004, making it second only to Hamas as a user of this tactic.²⁰⁷

There is no particular indication that the PIJ is interested in or willing to use weapons of mass destruction and the same considerations concerning its program and strategy apply to it as to Hamas and Hezbollah.

Jemaah Islamiyah (Jamaah Islamiyah, etc., J.I.)

Jemaah Islamiyah is a militant Islamist group that was founded in Indonesia but now operates in several Southeast Asian countries. It is dedicated to creating Islamic governments in the states of Southeast Asia with large Muslim populations, with the ultimate aim of creating a single Islamic state, to be called “Da’ulah Islamiah Raya,” for all of the region’s 300 million or so Muslims.

Assessments of its reach vary: the Council on Foreign Relations, for example, says it is active in Malaysia, Indonesia, and Singapore, as well as “possibly the

²⁰⁴ Michael Donovan “Palestinian Islamic Jihad (PIJ),” *Center for Defense Information – Terrorism Project* April 19, 2002 (<http://www.cdi.org/terrorism/pij.cfm>)

²⁰⁵ No author or date given, “Palestinian Islamic Jihad,” *International Policy Institute for Counter-Terrorism* (Israel), (http://www.ict.org.il/inter_ter/orgdet.cfm?orgid=28)

²⁰⁶ Alden Oreck “Islamic Jihad” *Jewish Virtual Library – American-Israeli Cooperative Enterprise*, 2003 (<http://www.us-israel.org/jsource/Terrorism/PIJ.html>)

²⁰⁷ Harel, “100th Suicide Bomber,” *op. cit*

Phillipines and Thailand,”²⁰⁸ while the BBC says the “network stretches across Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Smaller cells might also exist in Cambodia, Vietnam, and even Australia.”²⁰⁹ To some extent, perceptions of J.I.’s reach depend on how it is defined: the organisation has close ties to the militant Indonesian Wahhabist group Laskar Jihad, to the Philippines’ Abu Sayyaf via the Kumpulan Mujahideen Malaysia (KMM) which was founded and led by two of the J.I.’s leaders,²¹⁰ to the Moro Liberation Front, an Islamic separatist group in Mindanao, Malaysia, and to other organisations, including al Qa’ida. So wide and deep are the J.I.’s connections to other Southeast Asian organisations that it has been described as being “at the core of [an] extensive, complex, and resilient terrorist labyrinth in Southeast Asia”.²¹¹

The J.I.’s origins are somewhat obscure. Most observers agree that it was founded in its present form in the mid-1980s by two clerics, Abdullah Sungkar and Abubakr Ba’asyir (a.k.a. Abu Bakr Bashir), and developed its violent tendencies when it made contact with al Qa’ida representatives, including Riduan Isamuddin (better known as ‘Hambali’) in the mid-1990s. Other sources say the name ‘Jemaah Islamiyah,’ which simply means ‘Muslim Association,’ ‘Muslim Nation,’ or ‘Nation of Islam,’ was used as early as the 1970s and that the organisation has its roots in Darul Islam (possibly more correctly ‘Dar ul Islam’) “a violent radical movement that advocated the establishment of Islamic law in Indonesia,” that emerged with Indonesia’s independence from Dutch rule in the late 1940s.²¹²

Osama bin Laden and al Qa’ida first moved into the region in the late 1980s, according to one source, because its enormous Muslim population allowed al Qa’ida to raise funds relatively easily, frequently via unwitting or co-opted charitable bodies, while

²⁰⁸ Council on Foreign Relations “Jemaah Islamiyah” (<http://cfrterrorism.org/groups/jemaah.html>)

²⁰⁹ David Wright-Neville (Monash University, Melbourne) “Jemaah Islamiyah Still a Threat,” *BBC News*, Friday, 15 August, 2003 (<http://news.bbc.co.uk/1/hi/world/asia-pacific/2983612.stm>)

²¹⁰ Reyko Huang and Colin McCullough “In the Spotlight: Jemaah Islamiyah” *Center for Defense Information*, October 18, 2002 (<http://www.cdi.org/terrorism/ji.cfm>)

²¹¹ Huang and McCullough, *ibid.*

²¹² Council on Foreign Relations, “Jemaah Islamiyah,” *op. cit.*

its lax financial regime, with its all-but unregulated Islamic banks and *hawala*²¹³ networks, allowed its operatives to move and launder large amounts of money with little or no risk. It was only secondarily that the region came to be seen as a theatre of operations for al Qa'ida in its own right.²¹⁴

The chief link between al Qa'ida and the J.I., as we have noted, was Hambali. He was born in West Java but moved to Malaysia in 1985 at the age of 20 and, a few years later, joined Osama bin Laden and his mujihidin for a three year stint fighting the Soviet forces occupying Afghanistan. When he returned, said Ba'asyir, he "encouraged people to carry out jihad, which at that time was not known in Malaysia".²¹⁵ By 1994 he appeared to be receiving representatives, and large amounts of money, from al Qa'ida. He has been described as the "chief Southeast Asian representative and logistical coordinator for al-Qaida."²¹⁶ At the time of his arrest (see below), Australian Prime Minister John Howard described him thus: "This man is a very big fish. He's the main link between al Qa'ida and J.I. He was almost certainly the ultimate mastermind of the Bali attack."²¹⁷

Jemaah Islamiyah was responsible for the bombing of the Kuta 'tourist strip' in Bali on October 12, 2002, that killed 202 people, and for a simultaneous bomb that

²¹³ Hawala is a system of "money transfer without money movement" in which a payment to a local *hawaladar*, or hawala dealer, is 'transferred' to a recipient in another country. The local hawaladar informs his or her counterpart in the foreign country that the money has been received and asks the remote hawaladar to pay the equivalent amount to the nominated recipient. The remote hawaladar may be paying off a debt to the local agent or using cash the local agent previously deposited with them. However, the hawaladars may settle accounts by less legitimate means, such as manipulating invoices for goods traded between them. Hawala networks are very informal and rely on trust (one of the meanings of 'hawala') and personal connections between the parties. While hawala networks may be legal and above-board (sometimes in only one of the countries involved), the system lends itself to money-laundering, exchange control evasion, currency speculation, and other illicit activity. After "The hawala alternative remittance system and its role in money laundering," Interpol General Secretariat, Lyon, January 2000 (<http://www.interpol.int/Public/FinancialCrime/MoneyLaundering/hawala/default.asp>)

²¹⁴ Zachary Abuza "Funding Terrorism in Southeast Asia: The Financial Network of al Qaida and Jemaah Islamiya," *Contemporary Southeast Asia*, Vol. 25 No. 2, August, 2003

²¹⁵ Abubakr Ba'asyir quoted in: Simon Elegant and Sungei Manggis "Asia's Own Osama" *Time Asia*, April 1, 2002 (http://www.time.com/time/asia/features/malay_terror/hambali.html)

²¹⁶ Elegant and Manggis "Asia's Own Osama" *ibid.*

²¹⁷ Quoted in: Amy Chew and others, "Hambali was 'plotting APEC attack': Suspected mastermind of Bali, Jakarta attacks" *CNN.com* (<http://www.cnn.com/2003/WORLD/asiapcf/southeast/08/14/hambali.capture/>)

exploded near Bali's U.S. consulate.²¹⁸ The J.I. is believed to have been behind the bombing of a Marriot hotel in Jakarta in August, 2003, that killed 12 people. It has been linked to a series of bombings in Indonesia and the Phillipines in 2000, and to a plot to attack American, Israeli, British, and Australian embassies or diplomatic buildings in Singapore.²¹⁹ Members of J.I. have also been accused of assisting two of al Qa'ida's September 11, 2001, attackers.²²⁰

Thailand's Muslim-majority provinces in the southern panhandle bordering Malaysia have seen a notable increase in violent incidents in recent years that some attribute to an indigenous insurgency,²²¹ but which others link to al Qa'ida-affiliated or inspired Islamist groups, especially J.I., based in Malaysia. Clearly, the two need not be mutually exclusive, although where the interpretative weight is placed has important implications.

Recent American foreign policy, especially the invasions of Afghanistan and Iraq, may have increased popular support for, and even membership in, the J.I., although it is obviously difficult if not impossible to objectively assess either. Nonetheless, there is a

²¹⁸ Mukhlas, a.k.a. Ali Gufron, a Muslim religious teacher, was sentenced to death for coordinating the bombings along with one of his brothers, Amrozi, and the 'field commander' for the plot, Imam Samudra. Mukhlas and Samudra have been described as senior leaders of J.I.. Abu Bakr Ba'asyir, the alleged spiritual leader and co-founder of the J.I., was initially convicted of subversion in relation to the Bali bombing, but his conviction was overturned on appeal. Hambali was in custody in the United States at the time of writing and had not been charged or tried in connection with any of these incidents. He was arrested in Thailand in August, 2003, and handed over to the CIA. In September, 2003, the U.S. refused Indonesian authorities permission to interrogate him in connection with the Bali bombings. Indonesia does not have an extradition treaty with the United States.

²¹⁹ U.S. State Department "Backgrounds on Designated Foreign Terrorist Organisations," *Patterns of Global Terrorism 2002*, Department of State Publication 11038, Office of the Secretary of State Office of the Coordinator for Counterterrorism, April 2003, pp. 13, 42

²²⁰ Mark Manyin *et al*, *CRS Report for Congress: Terrorism in Southeast Asia*, Congressional Research Service, The Library of Congress, updated November 18, 2003

²²¹ *Cf.* James T. Kirkhope, research director of the Terrorism Research Center in Arlington, Virginia, quoted in: Julian Gearing "Terror in Thailand: 'Ghosts' and Jihadis," *Asia Times Online*, April 3, 2004 (http://www.atimes.com/atimes/Southeast_Asia/FD03Ae05.html)

sense among Indonesian Muslims that “if the J.I.’s against America, they might have the right idea.”²²²

Unfortunately, we must rate the risk of the J.I. using nuclear or radiological weapons as moderate to high. If they were indeed responsible for the Kuta bombing, they have shown themselves to be willing and able, psychologically as well as technically, to commit mass-casualty terrorism, while they have strong links with al Qa’ida and appear to have adopted their revivalist and jihadist ideas. The J.I. appears to have a large membership and good organisation, as witnessed by some of its successful operations, and a level of popular support that might be increasing as the United States’s imbroglio in the Middle and Near East worsens. Indonesia has a relatively sophisticated, although small, nuclear infrastructure and it is possible that nuclear materials might leak to the J.I.. The most likely scenario would be ‘misdirection’ via a sympathetic insider, but a simple raid on a nuclear facility is not out of the question.

Nationalist/Separatist Terrorists

Ansar al-Islam (Partisans of Islam)

It is not clear whether this group should be considered a nationalist or an Islamist or jihadist group, and there is also room for debate as to whether it is truly a terrorist organisation, although many of the actions of Iraqi resistance fighters do clearly fall within the definition of terrorism. Ansar, as it is commonly known, is involved in the Iraqi resistance to the American occupation, although the true extent of its involvement is masked by the loose use of its name, especially by American military and other officials.

Ansar al-Islam was originally a fundamentalist Kurdish Muslim group that was formed and initially operated in and from northern Iraq, although it now seems to be almost a blanket name adopted by or applied to fighters resisting the American occupation. Its first role was to oppose the secular Kurdish authorities that effectively

²²² Dan Lev, speaking at *Islam and Politics in Comparative Perspective: Turkey, Iran, and Indonesia* conference, University of British Columbia and Simon Fraser University, Vancouver, Canada, June 4, 2004.

ruled northern Iraq under the cover of the coalition-enforced no-fly zone, and it was allegedly supported by the Saddam Hussein regime and by Iran, both of which had obvious interests in destroying the Kurdish separatist ‘government;’ by al-Qaida, presumably because of that organisation’s blanket condemnation of secular government in Arab lands; and by wealthy individual donors in various Arab states.

Since then, however, it has been described by the Pentagon as their “principal organized terrorist adversary in Iraq,”²²³ while the U.S. State Department says it “has close links to and support from al-Qaida. Al-Qaida and Usama bin Laden participated in the formation and funding of the group, which has provided safehaven [sic] to al-Qaida in northeastern Iraq.”²²⁴ *Jane’s Terrorism and Security Monitor* concurs, saying “[t]here is mounting evidence that Ansar al-Islam has links with Al-Qaeda” and that it is “rapidly becoming a major adversary of the USA and the cutting edge of the Iraqi resistance.”²²⁵ Other observers, however, have described its links to al-Qaida as “tenuous” and say these were used to “to help justify the war against Iraq.”²²⁶ The American tendency to demonise states and organisations by implying association with al Qa’ida should always be remembered in discussions of this kind.

Ansar is in turn believed to be “the core” of a group calling itself Jaish Ansar al-Sunna (Army of the Sunni Partisans) which has been accused of being behind “the suicide bombing of the Turkish embassy in Baghdad on 14 October 2003, the 29 November ambush in which nine Spanish intelligence officers were killed and other such attacks, including the car bombing of a Mosul police station on 31 January 2004.”²²⁷

²²³ Lt.-Gen. Norton Schwartz in “DoD News Briefing – Secretary Rumsfeld, Mr Di Rita and Lt. Gen. Schwartz,” U.S. Department of Defense News Briefing, Thursday, October 23, 2003 (<http://www.defenselink.mil/transcripts/2003/tr20031023-secdef0810.html>)

²²⁴ Richard Boucher, U.S. Department of State, “Foreign Terrorist Organizations: Designation of Ansar al-Islam (AI), Redesignation of Three Others,” March 22, 2004 (<http://www.state.gov/r/pa/prs/ps/2004/30649.htm>)

²²⁵ Ed Blanche “Ansar al-Islam takes on the USA,” *Jane’s Terrorism and Security Monitor*, March 8, 2004. (http://www.janes.com/security/international_security/news/jtism/jtism040308_1_n.shtml)

²²⁶ Scott Peterson “The Rise and Fall of Ansar al-Islam” *Christian Science Monitor*, October 16, 2003 (<http://www.csmonitor.com/2003/1016/p12s01-woiq.html>)

²²⁷ Ed Blanche “Ansar al-Islam takes on the USA,” *op. cit.*

Ansar was apparently once “part of a long-term Al Qaeda dream to spread Islamic rule from Afghanistan to Kurdistan and beyond,”²²⁸ but the organisation was seriously disrupted by massive American attacks on its headquarters in Sargat, northern Iraq, in March 2002. Some estimates say that up to 250 of the original 600 members were killed in the raid and most of the rest were arrested by the PUK. While its formal structure has been severely damaged, if not altogether destroyed, Ansar may be continuing to send out “small, freshly activated cells. And instead of just attacking secular Kurdish authorities – the root motivation of Ansar and its predecessor Islamist groups – these cells may be shifting to an anti-US mission, in tandem with Saddam Hussein loyalists.”²²⁹ Like Al Qa’ida, it might be changing from a discrete organisation to a set of much looser affiliations, to a *nom de guerre* adopted by otherwise independent groups, or even to an ideology. Citing “lengthy interviews” with captured al-Ansar operatives as well as intelligence sources with the Patriotic Union of Kurdistan (PUK), the *Christian Science Monitor* says “[t]he “Ansar” label today ... is also being assumed by Islamic militants of all stripes, and used freely by the US-led coalition, regardless of ties to the original Kurdish group.”²³⁰

American Secretary of State Colin Powell claimed in his address to the United Nations on February 5, 2003, that Ansar’s compound at Sargat was the site of a chemical weapons factory, but journalists who visited the base shortly before its destruction said they saw “no obvious evidence of chemical weapons production.” They could only find “one drum which had originally contained plastic-related chemicals but it was empty”.²³¹ After the camp was destroyed the American search for terrorist weapons of mass destruction turned up nothing, following a pattern that came to be repeated throughout Iraq after the invasion.

²²⁸ Scott Peterson “The Rise and Fall of Ansar al-Islam,” *op. cit.*

²²⁹ *Ibid.*

²³⁰ *Ibid.*

²³¹ Jim Muir “Journalists visit ‘chemical weapons site’” BBC News World Edition, February 12, 2003 (http://news.bbc.co.uk/2/hi/middle_east/2741003.stm) Many other journalists and media outlets reported similar findings – cf “Islamic Militants Show Press the Camp Powell Called Poison Site” *Associated Press*, February 8, reproduced by Media Review Network (<http://www.mediareviewnet.com/home.html>)

Ansar al-Islam and those acting in its name have shown no signs of having a WMD capability of any sort, let alone nuclear or radiological weapons. Like other resistance movements in Iraq they appear, in general, to be relying on the tried-and-true: suicide bombers, roadside bombs, and explosives and weapons looted from old Iraqi army stores. One event has changed this perception somewhat, however. A “binary chemical projectile,” a 155mm artillery round with two chambers containing chemicals that would mix to produce sarin nerve gas when fired, was found rigged as a roadside bomb in Baghdad in May, 2004. It released very little dangerous gas when detonated by U.S. forces, showing that the compounds had not mixed correctly. American officials said the round came from Saddam Hussein’s arsenal, despite his claim to have destroyed all such rounds before the 1991 Gulf War.²³² It was said to be the first confirmation since the invasion that Saddam had indeed retained WMDs.

Obviously, this single incident must not be made to carry too much weight: we do not know whether the shell was planted by a large, organised group or simply by a couple of teenagers who happened upon it by accident. Nonetheless, it opens up some interesting lines of thought. First of all, it served notice that a kind of chemical weapons capability was available to resistance fighters in Iraq, even if it came from whatever weapons had survived American searches rather than homegrown laboratories, and that the resistance was willing to use it. By its failure to detonate and release its gas, however, the shell demonstrated the bombers’ technical incompetence. It also raised the possibility that other weapons of mass destruction might have survived various investigations before and after the fall of Saddam. This should not be taken too far, though, as Iraq’s chemical weapons, including sarin, were well known for years before the American invasion, while by the time of writing there had been no evidence of its possessing either nuclear weapons or fissile materials in significant quantities.

As far as nuclear terrorism is concerned, Ansar faces many of the same technical and logistical problems, exacerbated by the American occupation, as any other group, while it might be constrained against using WMDs in some circumstances because of the

²³² Kirk Semple “U.S. Finds Shell With Nerve Gas in Iraq” *New York Times*, May 17, 2004 (<http://www.nytimes.com/2004/05/17/international/middleeast/17CND-SARI.html>)

risk of injury to Iraqis. However, the sarin shell incident, if it was indeed Ansar's work, could argue against this restraint.

A number of Iraq's major military production sites, including al Tuwaitha, al Radwan, al Qaqaa²³³, al Ameer, al Hatteen, and the al Qadisiya State Establishment, were extensively looted of large amounts of specialised equipment and, possibly, radioactive materials between mid-April and mid-May, 2003, after the American invasion.²³⁴

Al Tuwaitha, south-east of Baghdad, has been described as Iraq's largest nuclear facility. It housed the Tammuz I (Osiraq - destroyed by Israel in 1981), Tammuz II (Isis), and IRT-5000 research reactors and a number of programs related to uranium enrichment, including gas centrifuges, Electromagnetic Isotope Separation (EMIS), chemical separation, and gaseous diffusion. It housed facilities for the separation of very small (gram) quantities of plutonium and an experimental program for producing lithium-6, a precursor for tritium, which is used as a fusion booster in advanced weapons.²³⁵ Before the war it also held the following materials: "some 500 tonnes of radioactive 'yellow cake'; six tonnes of depleted uranium; 27.5 tonnes of uranium oxide, [and] up to 400 'industrial' radiation sources."²³⁶

Greenpeace, the environmental organisation, was able to visit the site after the war and found evidence that villagers had looted the site for barrels that they used for storing food and water, apparently ignorant of the risks of radiation. Greenpeace also found some very highly radioactive objects, including three abandoned industrial

²³³ More than 340 tons of high explosive were reported missing from this site on October 10, 2004, by the General Director of the Planning and Following Up Directorate of the Ministry of Science and Technology of Iraq, in enclosure to: U.N. Secretary-General Kofi A. Annan, "Letter dated 25 October 2004 from the Secretary-General addressed to the President of the Security Council" October 25, 2004 (reproduced by the IAEA at <http://www.iaea.org/NewsCenter/Focus/iaeaIraq/IraqUNSC25102004.pdf>)

²³⁴ James Glanz and William J. Broad "Looting at Weapons Plants Was Systematic, Iraqi Says," *New York Times*, March 13, 2005 (<http://www.nytimes.com/2005/03/13/international/middleeast/13loot.html?pagewanted=1&th>)

²³⁵ McDonough Mark *Tracking Nuclear Proliferation: A Guide in Maps and Charts* (Washington, DC: Carnegie Endowment for International Peace, 1998) p. 201

²³⁶ Pre-war inventory as reported to the International Atomic Energy Agency (IAEA) and cited in: Mike Townsley, Greenpeace International Iraq Project Coordinator, "Letter to Dr Mohamed alBaradei, Director-General, International Atomic Energy Agency (IAEA) and others", July 29, 2004

radiation sources and four to five kilograms of uranium 'yellowcake' in an abandoned mixing canister.²³⁷

All of the sites mentioned were also apparently looted or otherwise stripped of highly specialised equipment, according officials in the new Iraqi government, but the IAEA has been largely excluded from Iraq by the U.S. occupying forces since March, 2003, and neither the White House nor American "military officials in Baghdad" have been willing to discuss the matter with journalists.²³⁸

Despite the fact that since March 17, 2003, "the IAEA has not been in a position to implement its mandate in Iraq under resolution 687 (1991) and related resolutions," it has been using what sources it can to try to find the missing equipment.²³⁹

As a result of its ongoing review of satellite imagery acquired on a regular basis, and follow up investigations, the IAEA continues to be concerned about the widespread and apparently systematic dismantlement that has taken place at sites previously relevant to Iraq's nuclear programme and sites previously subject to ongoing monitoring and verification by the IAEA. The imagery shows in many instances the dismantlement of entire buildings that housed high precision equipment (such as flow forming, milling and turning machines; electron beam welders; coordinate measurement machines) formerly monitored and tagged with IAEA seals, as well as the removal of equipment and materials (such as high strength aluminium) from open storage areas.

As indicated previously to the Council, the IAEA, through visits to other countries, has been able to identify quantities of industrial items, some radioactively contaminated, that had been transferred out of Iraq from sites monitored by the IAEA. However, none of the high quality dual use equipment or materials referred to above has been found.²⁴⁰

²³⁷ Mike Townsley, "Letter to Dr. elBaradei", *ibid.* See also, for example: no author credited "Appeal at looted Iraq nuclear site" BBC News, May 7, 2003; (http://news.bbc.co.uk/2/hi/middle_east/3005913.stm)

²³⁸ Glanz and Broad, "Looting at Weapons Plants", *op. cit.*

²³⁹ Mohamed ElBaradei, IAEA Secretary-General "Letter to Sir Emyr Jones Parry, President of the Security Council" October 1, 2004, p. 1 (<http://www.iaea.org/NewsCenter/Focus/laeaIraq/OctoberReport.pdf>)

²⁴⁰ *Ibid.* p. 2

However, the U.S. government has reported “that 1.8 tons of uranium enriched to 2.6% in uranium-235 and some additional 3 kilograms of uranium of various low enrichments, together with approximately 1000 highly radioactive sources, had, with the consent of the Interim Iraqi Government, been removed from Iraq and transferred to the United States.”²⁴¹ The IAEA was also able to carry out an “annual physical inventory verification of the remaining 550 tons of nuclear material” at the Tuwaitha complex and was “able to verify the presence of the nuclear material subject to safeguards.”²⁴²

It is hard to assess the significance, for our purposes, of the looting of al Tuwaitha and other nuclear-related sites in Iraq. As with other real or alleged cases of ‘loose’ nuclear or radioactive materials, there is the obdurate fact that neither terrorists nor insurgents appear to have used them (although it is just possible that news of their use has been suppressed by the forces occupying Iraq). Furthermore, it is not clear how much, if any, radioactive material has reached the insurgents. It is not something that either the American forces or the Iraqi government are willing to discuss, for obvious reasons. If any sources have indeed reached the insurgents, there must be some risk that they could be used in RDDs or REDs of some kind. It seems unlikely, however, that significant quantities of fissile materials have reached them, nor that such groups as al Ansar or the larger Iraqi resistance have the intention or capacity to develop INDs, especially under the conditions of the occupation. However, the question of where the equipment has actually gone and what its new possessors might do with it remains a pressing issue.

In general, it seems that the risk of nuclear terrorism from Ansar and the Iraqi resistance as a whole is probably low to very low. The typical al Ansar weapons continue to be improvised roadside bombs, ambushes, and suicide attacks, all ‘low-tech’ tactics popular with a wide range of armed actors, and the Iraqi resistance has shown no unusual technical skill nor tendencies to tactical innovation.

²⁴¹ *Ibid.* p. 2

²⁴² *Ibid.* p. 2

Jamaat al-Tawhid wa'l-Jihad (Unity and Jihad Group, Al Tawhid network)

This organisation has gained most of its notoriety, at least in the West, from the actions in Iraq of its founder and leader, Abu Musab al-Zarqawi (given name Ahmed al-Khalayleh, a.k.a. Ahmad Fadil Nazzali Abu Al-Mu'taz). The CIA claimed that al-Zarqawi was the man who beheaded American businessman Nicholas Berg in Iraq in May, 2004, in an event captured on videotape and made available on the Internet on an al-Ansar website.²⁴³ Al-Zarqawi, or someone acting in his name, has claimed responsibility for a number of bombings in Iraq in audio and video tapes. The U.S. has blamed him for many attacks there, including the bombing of the Jordanian embassy in Baghdad. At the time of writing Spain was said to be investigating the possibility that he was behind the Madrid train bombings of March 11, 2004, and the U.S. had put a bounty of ten million dollars on his head.²⁴⁴

Al Tawhid was active before the invasion of Iraq, however. Al-Zarqawi was a Jordanian citizen who, like Osama bin Laden, went to Afghanistan to fight as a *mujahid* against the Soviet invaders in the 1980s. When he returned to Jordan he was jailed for seven years for conspiring to overthrow the monarchy and establish a Muslim caliphate. He fled the country after his release, but was later sentenced to death *in absentia* for plotting terrorism against tourists. His next appearance, although not in person, occurred when a "militant cell" uncovered by German security forces claimed him as their leader, saying their organisation was "especially for Jordanians who did not want to join al-Qaeda".²⁴⁵

Al-Zarqawi next appeared in Afghanistan, where he set up a terrorist training camp near Herat that apparently specialised in poisons. It was here, various sources say,

²⁴³ Anonymous CIA 'official' quoted in Peter Grier and Faye Bowers "Iraq's bin Laden? Zarqawi's rise" *Christian Science Monitor*, May 14, 2004 (<http://www.csmonitor.com/2004/0514/p03s01-usfp.html>). The al-Ansar website, www.al-ansar.biz, was inaccessible at the time of writing.

²⁴⁴ No author credited "Profile: Abu Musab al-Zarqawi" *BBC News*, updated May 12, 2004 (http://news.bbc.co.uk/2/hi/middle_east/3483089.stm)

²⁴⁵ "Profile" *BBC News*, *ibid.*

that he re-established contact with al-Qaida, but also developed links with groups such as the Kurdish Ansar al-Islam (qv) and the Egyptian Islamic Jihad.²⁴⁶

Chechen Separatists

These guys are incredibly professional, to use the most morbid sense of the word.²⁴⁷

The story of modern Chechen separatist terrorism has its roots in centuries of fierce Chechen opposition to external domination by a succession of imperial powers, Russia being merely the most recent. The Chechen separatists warrant detailed attention here because they are unique among terrorists in actually having built and deployed an RDD, although it was not detonated.

Chechnya and the North Caucasus in general have always occupied an important place in Russian strategic thinking. Historically, the Caucasus has been an important southern frontier for the Russian empire and its route to projecting power into the Middle East, as well as being an international crossroads much contested by various states and powers, including the Mongol, Ottoman, and Austro-Hungarian empires. More recently, it has been vital to Russian interests because of oil. Chechnya's economy rests on oil and natural gas and Chechnya is located atop oil supply routes from the Caspian Sea basin. Baku, the capital of Azerbaijan, a former Soviet republic south of Chechnya on the western shore of the Caspian Sea, was the site of the world's first commercial oil well and Azerbaijan has long been a major energy supplier to Russia.

Not only is Russia's own energy security threatened by the possibility of an independent and potentially hostile Chechnya, the wars in Chechnya have greatly complicated plans for new pipelines to carry Caspian Sea oil to the rest of the world. Russia wants routes through the North Caucasus to supply its own energy needs and for a

²⁴⁶ Cf Katherine Pfleger Shrader "Experts: Al-Zarqawi rises in prominence" *Salon.com*, May 12, 2004 (<http://www.salon.com/news/wire/2004/05/12/zarqawi/>); "Profile" *BBC News*, *op. cit.*

²⁴⁷ Nick Pratt, director of the Program on Terrorism and Security at the George C. Marshall European Center for Security Studies, quoted in C. J. Chivers "The Chechen's Story: From Unrivaled Guerrilla Leader to the Terror of Russia", *The New York Times*, September 15, 2004 (<http://www.nytimes.com/2004/09/15/international/europe/15chechen.html>)

share of the pipeline tariffs, but the instability in the region is scaring off other interested parties. In 2002 the Baku-Tbilisi-Ceyhan Pipeline Company (BTC Co.), which will carry oil from Azerbaijan through Georgia and thence to Turkey, thereby entirely avoiding Russian territory, was established after years of political wrangling. Although the route does not entirely avoid areas of unrest and instability, such as the disputed Armenia-Azerbaijan border or the Kurdish region of Turkey, it was thought to be safer than a route through or closer to the Russian North Caucasus.

Finally, Chechen separatism is seen as a threat to the security and integrity of the Russian Federation as a whole. Permitting Chechnya to secede would set a dangerous example, from Moscow's point of view, for a number of restive nationalities and regions within the federation.

The current Chechen resistance to Russian domination can be said to have begun in 1830 when Imperial Russia tried to annex the North Caucasus region, including what is now Chechnya as well as Ossetia, North Ossetia, Dagestan, Ingushetia, and Kabardino-Balkaria. Chechen resistance and Russian distraction by the wars in the Crimea meant that the annexation was not completed until 1859, although Chechnya has never completely acceded to Russian rule. Chechen resentment of Russian domination was strengthened after World War II, when Stalin declared the entire population 'criminal' because a small proportion had sided with the Germans and deported them, with great loss of Chechen life, to Kazakhstan. They were only able to return to their homeland in 1957.

With the collapse of the Soviet Union in 1991 Chechnya declared its independence under Dzhokhar Dudayev. Russia, not surprisingly, refused to acknowledge its independence and in 1994 invaded the territory with a relatively small force. It became bogged down in what some have called Russia's Vietnam (although the same epithet has been applied to the Russian adventure in Afghanistan) and was forced to agree to a ceasefire in 1996 and a peace accord in 1997 that left Chechnya largely autonomous. However, the conflict, in the form of the 'second Chechnya war,' resumed two years later in the cause of suppressing terrorism in Russia and lawlessness in Chechnya. Shamil Basayev, the semi-legendary Chechen guerilla-cum-terrorist leader,

himself was partly responsible for the renewed hostilities, having led a failed invasion of neighbouring Dagestan.

Russia now largely controls Chechnya, although it does so by means of brutal tactics.²⁴⁸ Tens of thousands of Chechens (some estimates run as high as 200,000) have died and 200,000 to 400,000 have become internal refugees since 1991. The Chechen capital, Grozny, has been carpet-bombed to virtual destruction.

The conflict continues with Chechen fighters, the best known and most effective being Basayev, a one-time Prime Minister of Chechnya, carrying out terror attacks against Russian targets in the Caucasus and as far afield as Moscow itself. Basayev has either admitted his involvement in or been associated with a number of well-planned and audacious, but unquestionably terrorist, incidents that have involved up to 1400 civilians at a time. They include the September, 2004, hostage-taking and siege at Beslan, in neighbouring North Ossetia, that involved 1200 people and left 338, mostly children, dead; the near-simultaneous suicide bombing of two Russian airliners in August, 2004; the siege at a Moscow theatre in October, 2002, that left 130 dead at the hands of Russian security forces; and the seizure of an entire hospital and its approximately 1400 inmates at Budennovsk in southern Russia in 1995.²⁴⁹ Basayev and his associates have also been implicated by Russian authorities in a host of terrorist incidents around the Federation.

²⁴⁸ “In 2001, abuses by Russian forces continued to be an integral part of the daily life of civilians in Chechnya. In villages and towns throughout Chechnya federal forces conducted dozens of sweep operations. Ostensibly designed to seek out rebel fighters and their supporters and ammunition depots, sweeps are usually reactive, following Chechen military actions such as ambushes on Russian military columns or attacks on Russian checkpoints. They are routinely the occasion for abuse, particularly arbitrary detention and subsequent torture, ill-treatment, and “disappearances.” Soldiers also killed numerous civilians, both during and beyond the context of sweep operations, in indiscriminate shootings. Masked soldiers conducted numerous nightly raids, detaining men who subsequently “disappeared.” Human Rights Watch *Memorandum to the United Nations Commission on Human Rights on the Human Rights Situation in Chechnya*, March 18, 2002 (<http://www.hrw.org/un/unchr-chechnya.htm>) The Chechen resistance has also been guilty of obvious human rights abuses such as kidnappings, assassinations, and various other acts of terrorism.

²⁴⁹ According to Aljazeera.net, Basayev admitted his involvement in Beslan and the airliner bombings in a letter posted on his ‘official’ website, Kavkaz Center, on September 17, 2004. (<http://english.aljazeera.net/NR/exeres/6CE70E89-8625-4D24-95B1-DEB386021F27.htm>) However, a search of Kavkaz Center itself failed to find the original document.

Basayev's own history is complex and often unclear.²⁵⁰ In 1991, at the age of 26, he hijacked a Russian airliner to Turkey to call for Chechen independence. He next turned up, in rather mysterious circumstances, as a guerilla leader on the side of Russian-backed rebels fighting for the independence of Abkhazia from Georgia, formerly a part of the Soviet Union. When the war in Abkhazia burned out, he returned to Chechnya with a force of around 600 armed men. Between that time and the outbreak of the first Chechen war he may have spent some time in training camps in Khost, Afghanistan. Despite the possibility of links with al Qa'ida or other radical Islamist movements, Basayev's rhetoric during the early phase of his activity was secular and nationalist.

After the Russian invasion in 1994, Basayev became the Chechen resistance's most able commander, having taken charge of the defence of Grozny. In 1995, he suffered the loss of eleven family members in a direct Russian attack on his homes, an event that seems to have dramatically hardened his attitude towards the Russians and led him towards terrorism, as opposed to guerilla operations against Russian military targets.

Sometime between 1995 and 1997 Basayev began to associate more closely with Islamist fighters and movements when an Arab commander, Ibn al-Khattab, set up jihadist training camps in an area of Chechnya then under Basayev's command.

From early 1995, he worked closely with Khattab, a Saudi-born mujahid who had fought in Afghanistan and claimed a close relationship with Osama bin Laden. "Basayev was in charge, but Khattab brought in the money," says a former senior security officer in the guerrilla organization.²⁵¹

In Osama bin Laden's 'fatwa' of 1996 he said that "[t]he sons of the land of the two Holy Places had come out to fight against the Russian in Afghanistan, the Serb in Bosnia-Herzegovina and today they are fighting in Chechenia [sic] and – by the

²⁵⁰ Much of the factual material for this section is drawn from Paul Chivers "The Chechen's Story", *The New York Times*, *ibid*.

²⁵¹ Paul Quinn-Judge "Russia's Most Wanted" *Time*, Sunday, October 17, 2004 (<http://www.time.com/time/nation/article/0,8599,725076,00.html>)

Permission of Allah – they have been made victorious over your partner, the Russians.”²⁵²

Basayev stood for the presidency of Chechnya in early 1997, but only won 23.5% of the vote. Nonetheless, he was appointed Prime Minister, an office he held for just six months. The new Chechen government soon degenerated into gangsterism. Basayev, meanwhile, drew closer to the jihadists.

Those who have studied Mr. Basayev and his fighters say they appear to have made a marriage of convenience. Marginalized in politics, they joined with Islamists and found access to foreigners and cash.

‘That became grounds for fusion: people who had very little else in common accepted the sense of a common enemy,’ said Dr. Martha Brill Olcott of the Carnegie Endowment for International Peace.

Sebastian Smith, who also covers the Caucasus for the Institute of War and Peace Reporting, agreed. ‘My distinct feeling is that this was not a religious conversion,’ he said. ‘This was a means to an end, but a means that led him down this horrible path.’ The contrast with an earlier period was sharp. Asked by the Moscow News in 1996 if he had fought in Abkhazia for faith, Mr. Basayev answered: ‘What faith? Abkhazia is pagan almost to a man.’²⁵³

Whatever his personal beliefs, Muslim imagery and practices typical of Islamist extremists have become evident in Basayev’s recent work. Women dressed in traditional Muslim garb and wearing suicide-bomber belts were prominent in the Moscow theatre siege. Chechen fighters are described as “Mujahiddeen” on the ‘official’ resistance website, Kavkaz Center.²⁵⁴ In a recent videotaped response to questions put to him by the U.K.’s Channel 4 News, Basayev concluded his remarks by saying

²⁵² Osama bin Laden “Declaration of War against the Americans Occupying the Land of the Two Holy Places”, *op. cit.*

²⁵³ “The Chechen’s Story”, *ibid.*

²⁵⁴ *Cf.* no author credited, “Chechen Mujahiddeen Successful Special Actions”, Kavkaz Center, (<http://www.kavkazcenter.com/eng/article.php?id=3477>) Kavkaz Center is explicitly Muslim and militant; for example, a page on Islam (<http://www.kavkazcenter.com/eng/islam/>) features an image of an AK-47 carbine lying before a copy of the Koran.

This is a war between the descendants of monkeys, about whom your Darwin wrote, and the descendants of Adam, glory be to Allah.

This is the war of the descendants of Adam and Eve to put the animals in their place. I commit this to the great God and those who have taken the path to jihad, the direct path to God. Allah-hu akbar.²⁵⁵

Shamil Basayev remains at large and the fight for Chechen independence continues, so it can be assumed that there will be more Chechen terrorism.

We have discussed Basayev and the Chechen separatists at some length because, as we said earlier, they are the only significant terrorist group known to have deployed a potentially functional RDD. In 1995 they planted an explosive device containing a small amount of highly dangerous radioactive cesium-137 from a medical radiation device in Moscow's Izmailovsky Park. The device was not detonated; instead a Chechen, possibly Basayev himself, alerted the news media to its presence in what amounted to a high-stakes publicity stunt. It was followed by claims by a Chechen leader that the device represented "just a meager portion of the radioactive materials that we possess"²⁵⁶. Leonid Bolshov, Rafael Arutunyan and Oleg Pavlovsky caution that this statement might be simple braggadocio, but at the same time they remind us that "one of the largest radioactive waste storage facilities in the world is located in the territory of Chechnya".²⁵⁷

Bolshov *et al* may have been referring to the Russian Radon corporation's "Special Combine" waste dump near Grozny. This site is now officially closed, but there

²⁵⁵ Jonathan Miller "Another Beslan?" Channel 4 News, February 3, 2005 (http://www.channel4.com/news/2005/02/week_1/03_basayev.html)

²⁵⁶ Dzhokhar Dudayev, quoted in Leonid Bolshov, Rafael Arutunyan and Oleg Pavlovsky, "Radiological Terrorism" in Committee on Confronting Terrorism in Russia (Siegfried S. Hecker, Chair) *High Impact Terrorism: Proceedings of a Russian-American Workshop* (Washington: National Academy Press, 2002), p.147

²⁵⁷ Bolshov *et al*, "Radiological Terrorism" *ibid.*, p. 147

have been reports that Chechen separatists have removed radiation sources from it, so there might be some substance to the Chechens' claims.²⁵⁸

²⁵⁸ Yuriy Gladkevich, "Poshel v gory," *Profil*, 20 March 2000, p. 16, quoting "sources in the Russian Ministry of Defence", reproduced on "Russia: Radon: Chechens Reportedly Removed Radioactive Materials from Radon Site," Nuclear Threat Initiative (NTI) (<http://www.nti.org/db/nisprofs/russia/reactor/waste/radon.htm>)

Appendix B: Glossary

Atomic Bomb: A weapon that relies chiefly on nuclear **fission** to produce an explosion. Most modern nuclear weapons employ a combination of fission and **fusion**. Some are referred to as **boosted-fission** devices, while others are true **thermonuclear** or fusion bombs. The distinction depends on how much of the energy release is attributed to each process.

Boosted fission: A typical boosted fission bomb design uses a small **fusion** reaction at the centre of an implosion-type fission device to release large numbers of very high-energy neutrons that in turn ignite an explosive fission reaction in the bomb casing, which might be made of an otherwise non-fissile, but cheap, substance such as **uranium-238** or depleted uranium. Although the total energy released by the fusion reaction itself is small, relative to the overall **yield**, the bomb's total yield may be several times greater than it would be without boosting. Most modern nuclear weapons are 'boosted' to allow miniaturisation for delivery by missiles or artillery. The '**fusile**' or '**fusible**' components degenerate over time by natural decay and require regular replacement. See **suitcase nukes**, **SADM**

CBRN: See **WMD**.

Fusile: Substances that can be induced to undergo nuclear **fusion**. The most commonly used fusile substances are deuterium and tritium, the heavier isotopes of hydrogen, with one and two neutrons respectively more than 'normal' hydrogen.

Cesium-137: Cesium-137 is a radioactive isotope of an otherwise non-radioactive element and a candidate for use in **RDDs** or **REDs**. Cesium is one of the most chemically reactive elements, binding readily to other substances, including human tissue. Exposure to large doses can cause acute radiation syndrome, which includes nausea, vomiting, diarrhea, bleeding, coma, and even death in cases of very high exposures. Cesium-137 and its decay product, barium-137, are used for sterilization activities for food products, including wheat, spices, flour, and potatoes. Cesium-137 is also used in a wide variety of industrial instruments such as level and thickness gauges and moisture density gauges; in hospitals for diagnosis and treatment, as a calibration source, and to sterilize medical equipment; and in the oil prospecting and drilling industry.²⁵⁹

Cobalt-60: Cobalt-60 is, like **cesium-137**, a candidate for use in **RDDs** and **REDs**. It is a powerful source of gamma radiation that easily penetrates other materials, including human tissue, where it can cause cancer. Cobalt-60 is used in many common industrial applications, such as in leveling devices and thickness gauges, and in radiotherapy in hospitals. Large cobalt-60 radiation sources are increasingly used for sterilization of spices and certain foods. Cobalt-60 is also

²⁵⁹ U.S. Environmental Protection Agency *EPA Facts About Cesium-137* July, 2002 (<http://www.epa.gov/superfund/resources/radiation/pdf/cesium.pdf>)

used for industrial radiography, a process similar to an x-ray, to detect structural flaws in metal parts.²⁶⁰

CTR: Cooperative Threat Reduction program initiated in 1991 by U.S. Senators Sam Nunn and Richard Lugar under the Soviet Nuclear Threat Reduction Act, later renamed the Cooperative Threat Reduction Act and commonly called the Nunn-Lugar Act, to reduce the risk of nuclear weapons, materials, or expertise flowing from the former Soviet Union to proliferant states or terrorists. The CTR program was rolled into the Defense Threat Reduction Agency (**DTRA**) on its creation in 1998.

Dirty Bomb: See **RDD**. ‘Dirty’ and ‘clean’ are also used to differentiate between nuclear weapons, the terms referring to the efficiency of the weapons and the amount and kind of radioactive byproducts they produce.

DTRA: Defense Threat Reduction Agency, an agency of the U.S. Department of Defense (DoD). The DTRA was founded in 1998 combine DoD “resources, expertise and capabilities” to “ensure the United States remains ready and able to address the present and future **WMD** threat.”²⁶¹ The DTRA now administers the Cooperative Threat Reduction (**CTR**) program, also known as the Nunn-Lugar program, among a number of others.

Enrichment: The process whereby the percentage of fissile **uranium-235** in uranium is increased from its natural level of 0.7%. The most common method involves spinning uranium hexafluoride gas (‘hex’) in ultra-high speed centrifuges, thereby separating the isotopes by mass.

Fissile: The most significant fissile materials are **uranium-233**, uranium-235 or **plutonium-239**. Atomic nuclei of any of these substances will readily undergo **fission**, releasing energy in the process, when struck by neutrons of various speeds. Fissile materials undergo fission more easily than other fissionable materials, and are more desirable for most reactor types and essential for nuclear explosives.

Fission device: A nuclear weapon based on releasing energy through the **fission** (splitting) of the atomic nuclei of heavy elements such as **uranium-235** or **plutonium-239**. See also **thermonuclear**, **fusion**.

Fission: The splitting of the nucleus of a heavy atom into two lighter nuclei. It is accompanied by the release of neutrons, X-rays, and gamma rays, and the kinetic energy of the fission products. It is usually triggered by collision with a neutron, but in some cases can be induced by protons and other particles, or gamma rays.

Fizzle: The tendency for a nuclear reaction to start too soon when assembling **plutonium-239** into a supercritical configuration, leading to a dramatically reduced nuclear **yield**. This is caused by the even-numbered isotopes of

²⁶⁰ U.S. Environmental Protection Agency EPA “Radiation Information: Cobalt” (<http://www.epa.gov/radiation/radionuclides/cobalt.htm>)

²⁶¹ Defense Threat Reduction Agency (DTRA) “About DTRA” (<http://www.dtra.mil/about/index.cfm>)

plutonium, such as Pu-240, emitting neutrons by spontaneous **fission**. In a **gun-type device**, these neutrons would cause a chain reaction to blow the bomb apart before the two masses were properly assembled, causing a dramatically lower yield than intended. The risk of fizzle varies according to the percentage of Pu-240 in the bomb fuel. Assembly velocities are very much higher in **implosion devices**.

Fusion: The joining of two atomic nuclei under extreme heat and pressure resulting in the release of immense amounts of free energy and very high-energy neutrons. See also **thermonuclear, boosted-fission**.

Fusile: Fusile materials can be readily induced to undergo nuclear **fusion** and are used in **boosted-fission** and true **thermonuclear** weapons. The most common fusile materials are two heavy isotopes of hydrogen, tritium and deuterium – the latter is much cheaper and easier to produce than tritium. (In 1977-78 South Africa traded 60 *tons* of natural uranium for 30 *grammes* of Israeli tritium). Since both are hydrogen, they can be used as gases (under very high pressure), or supercooled to the liquid state. Using either obviously complicates bomb design and construction considerably. ‘Dry’ fusion designs use naturally occurring radioactive isotopes of the lightest metal, lithium, Li-6 or Li-7, which are chemically compounded with deuterium to form salts and break down to produce tritium and deuterium during the explosion.

Gun-type design: A bomb design in which a piece of **fissile material**, usually **uranium-235**, is struck by another piece fired into it at high speed, hence the design’s name. Both pieces are of subcritical mass, but firing the ‘gun’ assembles them into a supercritical configuration, causing a nuclear explosion.

Hex: Colloquial name for uranium hexafluoride gas (UF₆), the input for various uranium enrichment techniques, including centrifuge cascades. Hex reacts strongly with water, including water vapour in air, producing highly corrosive compounds.

HEU: Highly enriched **uranium**. The fissile isotope of uranium is U-235, which makes up only 0.7% of natural uranium. **Enrichment** increases this percentage; highly enriched uranium contains 20% or more U-235. **Weapons-grade** uranium contains 93% or more. See **LEU, weapons-useable**

Hydrogen bomb: See **thermonuclear**

Implosion design: A bomb design in which a hollow sphere of **fissile material** is compressed by the simultaneous detonation of a set of shaped explosive charges, called ‘lenses,’ that surround it. (Some multi-stage devices involve radiation implosion, using soft x-rays provided by a primary fission device, in a cylindrical case, rather than a sphere.) If the material is compressed far and fast enough, the fissile material reaches a supercritical state and a nuclear explosion results. Implosion devices are usually fuelled by **plutonium-239**, which cannot be used in the simpler **gun-type design** because of the problem of **fizzle** or predetonation. Terrorists are considered unlikely to use this design because of its technical complexity and the need for large amounts of **plutonium-239**.

IND: Improvised nuclear device. Simple fission-powered weapon not based on plan from national-level weapons program. A terrorist IND is almost certain to be a **gun-type** device using **uranium** enriched to some degree. It would probably require several times the bare critical mass of **HEU**, about 52kg, and might weigh as much as a ton or more.

International Atomic Energy Agency (IAEA): Founded in 1957 and based in Vienna, Austria, the IAEA is an autonomous international organization under the United Nations with 132 member states as of August 2001. The IAEA is charged both with the control of nuclear technology to prevent nuclear weapons proliferation and the development of nuclear energy for peaceful purposes.

LEU: Low-enriched **uranium**. Uranium enriched to less than 20% uranium-235. (See **enrichment**.) A device using low-enriched uranium or **LEU** was tested by the United States, but the amount of uranium required, about 800kg, would almost certainly put this design out of the reach of terrorists.

NRC: Nuclear Regulatory Commission. The American agency mandated to regulate “civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment.”²⁶²

Plutonium (Pu): A transuranic element produced when **uranium** is irradiated in a reactor. It is used primarily in nuclear weapons and, along with uranium, in mixed-oxide (MOX) fuel. Plutonium-239 is the most suitable isotope for use in nuclear weapons. See also **weapons-grade**, **weapons-useable**, **fissile materials**

RDD: Radiation dispersal device, also known as a ‘dirty bomb.’ Any device intended to disperse radioactive materials over an area or into the atmosphere for destructive or toxic effect. Potential RDDs could include simple explosives ‘salted’ or wrapped with radioactive materials; powdered radioactive substances introduced into the ventilation system of a building, such as a sports arena; and radioactive powder dispersed by an aircraft or road sanding truck. Compare with radiation emission devices or **REDS**.

RED: Radiation emission device. A device intended to emit radiation, as opposed to dispersing it over an area, as in a radiation emission device, or **RDD**. An RED could be a radiation source placed near a pedestrian bottleneck, such as the entrance to a busy subway station.

SADM: U.S. Special (or Small) atomic demolition munition. A category of portable nuclear device intended, as the name implies, for demolition purposes. The complete device weighed 68kg, or 150lbs, and had a yield of between 0.01Kt and 1Kt. See **suitcase nukes**.

Suitcase nukes: Miniaturised Soviet nuclear weapons said to be portable by a single person. Some were controversially alleged to have gone missing from the Russian arsenal after the collapse of the Soviet Union. If they indeed existed, they would

²⁶² U.S. Nuclear Regulatory Agency “Who We Are” (<http://www.nrc.gov/who-we-are.html>)

by now probably be incapable of nuclear yield because fusion booster components would have decayed beyond useability. See **boosted-fission**.

Thermonuclear or hydrogen bombs: Thermonuclear weapons are also called **fusion**, as opposed to **fission**, devices because they derive the bulk of their explosive energy from the fusing or joining of atomic nuclei, and not their splitting. These weapons typically fuse two isotopes of hydrogen, tritium and deuterium under the extreme heat and pressure caused by the detonation of a primary or trigger fission device and the detonation of another fissile 'sparkplug'. In theory, thermonuclear designs can use the principle of one device triggering another, known as staging, any number of times to produce almost unlimited yields. The most powerful thermonuclear device ever tested, the Soviet Czar Bomba, yielded 50Mt, *more than ten times the total power of all the explosives used in World War II, including the two American atomic bombs*. The 'King of Bombs' was designed to yield 100Mt, but it was not fully loaded for the test. America detonated a device with a 15Mt yield, more than double the expected power, in the notorious Castle Bravo test of February, 1954.

Uranium (U): A naturally occurring radioactive element whose principal isotopes are uranium-238 and uranium-235. Uranium-233 and uranium-235 are both **fissile**, although only U-235, which occurs in trace amounts in natural uranium, is typically used as the major component in nuclear reactors and weapons. The proportion of U-235 in uranium has to be greatly increased by means of **enrichment** for these purposes. (U-238 and depleted uranium, while not fissile in themselves, can be used in **boosted-fission** weapons.) See **weapons-grade, weapons-useable, fissile materials, HEU, LEU**

Weapons-grade: Refers to nuclear materials most suitable for the manufacture of nuclear weapons – **uranium (U)** enriched to 93% U-235 or **plutonium (Pu)** that is over 90% Pu-239. Some nuclear reactors, especially research reactors, still use weapons-grade uranium. Crude weapons could be fabricated from lower-grade material. See **weapons-usable material, HEU, LEU**

Weapons-usable material: Nuclear material in a form that can be readily fabricated into nuclear weapons, without need for processes that alter the isotopic content. These materials are not as desirable as **weapons-grade** material, such as highly enriched **uranium (HEU)** or **plutonium-239**. See **HEU, LEU**

Research reactor: Nuclear reactors, typically with low to very low heat outputs, in which radioactivity is used for purposes other than generating electricity. They are used to produce energetic particles of various kinds for pure research or to manufacture radioactive isotopes for medical, industrial, or research purposes. Because research reactors sometimes use **weapons-grade** or **weapons-useable** fuel and typically operate under low levels of security they are considered to be attractive targets for terrorists.

WMD: Weapons of mass destruction. These are usually taken to include chemical, biological, biotoxin, radiological, and nuclear weapons and are also commonly referred to as **CBRN** (pronounced 'seeburn' by those in the know, or wishing to seem so) weapons.

Yellowcake: A radioactive mixture containing approximately 65% to 85% uranium oxide (U_3O_8); an intermediate stage in the production of various forms of uranium, including uranium oxide fuel for nuclear reactors. Not useable as-is in a nuclear weapon, but can be 'cooked' in a reactor to produce plutonium or converted to uranium hexafluoride ('**hex**') gas for the production of enriched uranium. Yellowcake produced in modern processing plants is usually blackish.

Yield: The power of a nuclear blast, measured in terms of the mass of TNT required to produce an equivalent explosion. The units are kilotons (Kt - thousands of tons) and megatons (Mt – millions of tons).

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