



Praeuenis—Praepedis—Anticipas  
Predict—Prevent—Preempt

## CBRN Terrorism Post-9/11

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To appear in the forthcoming *Terrorism and Weapons of Mass Destruction*  
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The terrorist attacks on 11 September 2001 dramatically re-cast global perceptions of threat and vulnerability. Long-standing assumptions that terrorists were more interested in publicity than in killing were dramatically swept aside that morning in a crescendo of death and destruction. The deaths of some 3,000 persons at the World Trade Center, the Pentagon and aboard the hijacked aircraft were without parallel in the annals of terrorism.<sup>1</sup> Indeed, throughout the entire 20<sup>th</sup> century only 14 terrorist incidents had killed more than 100 persons<sup>2</sup> and, until 9/11, no terrorist operation had ever killed more than 500 persons.<sup>3</sup> To put the day's death toll in perspective: more than twice as many Americans perished on 9/11 than had been killed by terrorists since 1968<sup>4</sup>—the year acknowledged as marking the advent of modern, international terrorism.

So massive and consequential a terrorist onslaught naturally gave rise to fears that a profound threshold in terrorist constraint and lethality had been crossed. The attacks renewed fears and concerns were in turn generated that terrorists would now embrace an array of deadly non-conventional weapons in order to inflict even greater levels of lethality than occurred on 9/11. Attention focused especially on terrorist use of weapons of mass destruction (WMD), reflected in a new doctrine derived from Vice President Dick Cheney's reported statement that "If there's a one percent chance that Pakistani scientists are helping al Qaeda build or develop a nuclear weapon, we have to treat it as a certainty in terms of our response."<sup>5</sup> What the "one percent doctrine" meant in practical terms, one observer has argued, is that, "Even if there's just a one percent chance of the unimaginable coming due, act as if it's a certainty."<sup>6</sup> Countering the

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threat of non-conventional weapons proliferation thus became one of the central pillars of America's post-9/11 national security strategy—whether by rogue states arrayed in an “axis of evil” or by terrorists who might acquire such weapons from these same states or develop them on their own.

This chapter assesses the post-9/11 WMD terrorist threat. However, it eschews the terminology of WMD and instead uses the more helpful nomenclature of CBRN<sup>7</sup>—chemical, biological, radiological<sup>8</sup> or nuclear weapons. The chapter argues that we face a two-fold challenge from both al Qaeda, given its longstanding and documented ambitions to develop capabilities spanning all four weapons categories—chemical, biological, radiological, and nuclear—as well as from associated and affiliated jihadis, who are attracted to these weapons not necessarily because of their putative killing potential, but because of the profoundly corrosive and unsettling psychological effects that even a limited, discrete attack using a chemical, biological, or radiological weapon could have on a targeted society and nation. We begin by examining the conventional wisdom on terrorist use of CBRN weapons before 9/11, and then turn to a brief analysis of al Qaeda's longstanding ambitions and recent, important activities in this arena by its affiliates and associates.

### **The Pre-9/11 Conventional Wisdom on CBRN Terrorism**

Until 9/11, most thinking on terrorism in general and CBRN terrorism in particular was arguably seen through an anachronistic Cold War-era prism. This meant that many of our most basic assumptions about terrorists and terrorism—and, more critically, many governmental policies—had largely ossified during the 30 years since terrorism first emerged as a global security problem. These assumptions had originated and taken hold at a time of very different circumstances and dynamics, when radical left-wing terrorist groups and militant ethno-nationalist organizations were widely regarded as posing the most serious threats to Western security.<sup>9</sup> The only significant modification to this thinking or “fine-tuning” of government policies did not really occur until President Bill Clinton's second administration during the final years of the 20<sup>th</sup> century.<sup>10</sup> At the time, fears of the former Soviet Union's nuclear stockpile falling into terrorist hands—coupled with the 1995 nerve gas attack on the Tokyo by a Japanese religious cult, the Aum Shinrikyo—galvanized fears that terrorists would employ non-conventional weapons, which set in motion increased federal spending and new programs designed to counter this menace. However, these developments notwithstanding, on the eve of 9/11 the threat of potential terrorist use of CBRN weapons remained poorly understood and the efforts to counter it necessarily inchoate. In particular, the implications of terrorism motivated by a religious imperative, in contrast to the secular terrorism that hitherto had dominated this phenomenon throughout the entire Cold War era, was also as unappreciated as it was misunderstood.

Since the French Revolution at the end of the 19<sup>th</sup> century, terrorism had been practiced mostly by groups and persons motivated mostly by ideological or ethno-nationalist and separatist motivations.<sup>11</sup> Radical leftist (i.e., Marxist-Leninist/Maoist/Stalinist movements) organizations such as the Japanese Red Army, the Red Army Faction in Germany, and the Red Brigades in Italy, as well as ethno-nationalist terrorist movements like the Palestine Liberation Organization (PLO), Palestinian splinter groups like the Abu Nidal Organization, the Irish Republican Army (IRA), and the Basque separatist group ETA generally engaged in highly selective and mostly



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discriminate acts of violence. They chose to attack various symbolic targets representing the source of their animus (i.e., embassies, banks, national airline carriers, etc.) with conventional bombs, or kidnapped and assassinated specific persons whom they blamed for economic exploitation or political repression in order to attract attention to themselves and their causes. In this respect, their violence was deliberately kept within the bounds of what the terrorists' believed the prevailing political order and their core constituency of sympathizers and supporters deemed "acceptable." Terrorists, therefore, were seen as being careful not to undertake actions that might foreclose negotiations with their opponents, alienate them from the global political order that they sought to become a part of, or brook censure, condemnation or worse from their actual or perceived constituency. They appeared to be recognize that acts of mass destruction or bloodshed might result not only in international and domestic revulsion and castigation but, equally as important, that it might trigger severe governmental reprisals or countermeasures as well. In this now arguably anachronistic context, terrorists were seen as wanting to have a "seat at the table" and not, as former director of Central Intelligence James Woolsey was famously quoted in the report issued by the National Commission on Terrorism in 2000, now "want[ing] to destroy the table and everyone sitting at it."<sup>12</sup> In sum, mass, indiscriminate murder—such as that involving CBRN terrorism—consequently would alienate the very audience that the traditional type of terrorists sought to mobilize or influence. Further, it also risked creating a crisis that governments could seize upon to justify the severest repressive measures imaginable in order to eliminate completely any organization that dared to employ such heinous weapons.

For this reason, the violence used by left-wing terrorists, for instance, was always narrowly proscribed. Their self-styled crusade for social justice therefore was often typically directed against governmental or commercial institutions or persons whom they believed represented capitalist exploitation and repression. Specific individuals—including wealthy industrialists such as Hans Martin Schleyer, who was kidnapped and murdered by the German Red Army Faction (RAF) in 1977, or distinguished parliamentarians like Aldo Moro, whom the Italian Red Brigades similarly abducted and executed the following year, alongside lower-ranking government officials, factory managers or ordinary civil servants—were most often targeted. When the left did resort to bombing, the violence was conceived in equally "symbolic" terms. In this sense, although the damage and destruction that often resulted were certainly not symbolic, the act itself was meant to dramatize or call attention to the terrorists' grievances or political cause by striking at targets emblematic or symbolic of the terrorists' grievance and fundamental *raison d'être*.

This approach was not entirely dissimilar from that taken by the more prominent ethno-nationalist and separatist groups of that era: the PLO, IRA, and ETA. Although acts of terrorism committed by this category of terrorists were frequently more destructive and caused more casualties than those of their left-wing counterparts, the same self-imposed constraints and balancing act of finding a level of violence acceptable to their actual or perceived constituents while still conforming (however elastically) to the international political community's acceptable boundaries of tolerance was clearly evident. In a broader sense, ethno-nationalist and separatist terrorism was often specifically designed to appeal to international as well as internal opinion in support of the terrorists' irredentist or nationalist aims. Hence, to continue to receive the support of their constituency, generate sympathy among the international community and forestall massive governmental countermeasures, these terrorists also strove to regulate and calibrate their



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violence. The vast majority of their targets, accordingly, were often individuals— usually confined to low-ranking government officials, ordinary soldiers or policemen, other so-called “agents of the state,” and members of rival communities or ethnic groups.

Finally, however radical or revolutionary these groups were politically, the vast majority were also equally conservative in their operations. These types of terrorists were said to be demonstrably more “imitative than innovative,” having a very limited tactical repertoire that was mostly directed against a similarly narrow target set.<sup>13</sup> They were judged as hesitant to take advantage of new situations, let alone to create new opportunities. Accordingly, what little innovation that was observed was more in the terrorists’ choice of targets<sup>14</sup> or in the methods used to conceal and detonate explosive devices than in any particularly innovative tactics, much less in their use of non-conventional weapons—particularly chemical, biological, radiological or nuclear.

Although various terrorist groups—including Germany’s RAF,<sup>15</sup> Italy’s Red Brigades, and some Palestinian organizations—reportedly had toyed with the idea of using such indiscriminately lethal weapons, none had ever crossed the critical threshold of actually implementing their heinous daydreams or executing their half-baked plots. For example, it was occasionally reported that these groups had at one time or another “recruited microbiologists, purchased bacteriological experimentation equipment and dabbled in sending toxins such as anthrax to potential victims.”<sup>16</sup> What is known conclusively is that in 1979 Palestinian terrorists were suspected of having poisoned some Jaffa oranges exported to Europe in hopes of sabotaging Israel’s economy; then in 1984, followers of the Bhagwan Shree Rajneesh contaminated the salad bars of ten restaurants with salmonella bacteria; and six years later, the Liberation Tigers of Tamil Eelam (LTTE) used chlorine gas in an attack on a Sri Lankan military camp at East Kiran.<sup>17</sup> But these three isolated incidents represented virtually the total extent of either *actual* use or serious *attempts* at the use by terrorists of such non-conventional weapons and tactics.

Instead, most terrorists seemed almost content with the limited killing potential of their handguns and machine-guns and the slightly higher rates that their bombs achieved. Like most people, terrorists themselves appeared to fear powerful contaminants and toxins they knew little about and were uncertain how to fabricate and safely handle, much less effectively deploy and disperse. Indeed, of some 12,000 incidents recorded in the RAND Terrorism Incident Database between 1968 and 1998, perhaps only 60 or so evidenced any indication<sup>18</sup> of terrorists *seriously* plotting such attacks, attempting to use chemical or biological agents or intending to steal, or otherwise fabricate their own nuclear devices.

Perhaps the main reason that terrorist use of CBRN was discounted before 9/11 was because terrorists, it was repeatedly argued, were fundamentally rational.<sup>19</sup> There were few realistic demands that terrorists could make by threatening the use of such indiscriminate weapons. There were also few objectives that terrorists sought which could not be obtained by less extreme measures than the detonation of a nuclear device or dispersal of radioactive materials<sup>20</sup> or by attacks employing either biological or chemical warfare agents. In perhaps the most important book written on the subject in the 1970s, Walter Laqueur unambiguously concluded that, “It can be taken for granted that most of the terrorist groups existing at present



will not use this option, either as a matter of political principle or because it would defeat their purpose."<sup>21</sup>

The terrorists' perceived obsession with controlling events was also regarded as an important constraint.<sup>22</sup> "Terrorists, like war planners," one unidentified expert opined at a mid-1980s symposium on the subject of nuclear terrorism, "believe they can control what they start . . . and CB [chemical and biological agents] seems too uncontrollable." Hence, this line of argument went, terrorists would abjure from using weapons that could not be discriminately directed against their enemies only, and that therefore could also harm their ethnic brethren, co-religionists, or that often declared but indistinctly amorphous constituency, the so-called "people." Of equal significance was that while terrorists had mastered all the components of operations using conventional weapons, they were thought to be wary of venturing into such terra incognita as WMD. Hence, like most ordinary people, terrorists also harbored profound fears about dangerous substances which they knew little about and, if handled improperly, would affect them as adversely as it would their intended target(s).

Even when experts in the 1970s thought about possible terrorist use of WMD, the prevailing consensus was that terrorists would axiomatically prefer nuclear or radiological weapons over chemical or biological ones.<sup>23</sup> As Brian Jenkins—perhaps that era's leading terrorism analyst—explained in a paper presented at the same conference noted above,

Terrorists imitate governments, and nuclear weapons are in the arsenals of the world's major powers. That makes them "legitimate." Chemical and biological weapons also may be found in the arsenals of many nations, but their use has been widely condemned by public opinion and proscribed by treaty, although in recent years the constraints against use seem to be eroding.<sup>24</sup>

But most importantly, there was a general acceptance of the observation made famous by Jenkins that "Terrorists want a lot of people watching and a lot of people listening and not a lot of people dead."<sup>25</sup> This maxim was applied directly to potential terrorist use of WMD and in turn was often used to explain the paucity of actual known plots, much less verifiable incidents. Writing in 1975 with reference to potential terrorist use of radiological or nuclear weapons, Jenkins argued that

Scenarios involving the deliberate dispersal of toxic radioactive material . . . do not appear to fit the pattern of any terrorist actions carried out thus far . . . . Terrorist actions have tended to be aimed at producing immediate dramatic effects, a handful of violent deaths—not lingering illness, and certainly not a population of ill, vengeance-seeking victims . . . . If terrorists were to employ radioactive contaminants, they could not halt the continuing effects of their act, not even long after they may have achieved their ultimate political objectives. It has not been the style of terrorists to kill hundreds or thousands. To make hundreds or thousands of persons terminally ill would be even more out of character.<sup>26</sup>

This was also the conclusion reached by a contemporary of Jenkins', the noted authority on sub-national conflict, J. Bowyer Bell. He too dismissed the possibility that terrorists might target a



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commercial nuclear power plant in hopes of engineering a meltdown or large-scale atmospheric release of radioactive materials on similar grounds of political expediency and logical instrumentality. "[T]here is no evidence," Bell wrote in 1978,

that terrorists have any interest in killing large numbers of people with a meltdown. The new transnational television terrorists want media exposure, not exposure of the masses to radioactive fallout. And finally, the technological capacities of organizations with sufficient military skills to launch an attack . . . are not great. The mix of motive, military and technological skills, resources, and perceived vulnerability simply does not exist.<sup>27</sup>

Despite the events of the mid-1980s—when a series of high profile and particularly lethal suicide car and truck bombings were directed against American diplomatic and military targets in the Middle East (in one instance resulting in the deaths of 241 Marines)—many analysts saw no need to revise these arguments. In 1985, Jenkins, for example, again reiterated that, "simply killing a lot of people has seldom been one terrorist objective . . . Terrorists operate on the principle of the minimum force necessary. They find it unnecessary to kill many, as long as killing a few suffices for their purposes."<sup>28</sup> In the revised version of his earlier work, Laqueur similarly emphasized that

Groups such as the German, Italian, French, Turkish or Latin American terrorists are unlikely to use nuclear, chemical or bacteriological weapons, assuming that they have any political sense at all—an assumption that cannot always be taken for granted. They claim to act on behalf of the people, they aspire to popular support, and clearly the use of arms of mass destruction would not add to their popularity.<sup>29</sup>

In sum, the conventional wisdom on terrorism prior to 9/11 held that terrorists were not interested in killing, but in publicity. Violence was employed less as a means of causing mass death and destruction than as a way to attract supporters, focus attention on the terrorists and their causes or attain a tangible political aim or concession—for example, the release of imprisoned brethren, some measure of political autonomy, independence for an historical homeland or a change of government. Terrorists therefore believed that only if their violence were calculated or regulated would they be able to obtain the popular support or international recognition they craved or attain the political ends they desired. Indeed, as one IRA fighter from this previous era of terrorism once explained, "You don't just bloody well kill people for the sake of killing them."<sup>30</sup>

Both the 9/11 attacks themselves, along with the evidence that has come to light since about al Qaeda's grandiose ambitions spanning the entire CBRN spectrum, have now effectively refuted these longstanding assumptions. Indeed, as Laqueur warned in a seminal reassessment of terrorism trends and thinking published in 1996, "Proliferation of weapons of mass destruction does not mean that most terrorists are likely to use them in the foreseeable future, but some almost certainly will, in spite of all the reasons militating against it."<sup>31</sup> It is al Qaeda's efforts in chemical, biological, radiological, and nuclear weapons development that is the focus of the next section.



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## Al Qaeda's CBRN Weapons Ambitions and Intentions

Usama Bin Laden's interest in acquiring a nuclear weapon reportedly began as long ago as 1992, and an attempt by an al Qaeda agent to purchase uranium from South Africa was reportedly made either late the following year or early in 1994 without success.<sup>32</sup> Four years later, al Qaeda operatives were still engaged in this quest when Mamdouh Mahmud Salim, a senior official in the organization, was arrested in Germany while attempting to buy enriched uranium. Bin Laden, however, appears to have been undeterred by these initial failures. Indeed in May 1998, he issued a proclamation in the name of the "International Islamic Front for Fighting the Jews and Crusaders," titled "The Nuclear Bomb of Islam." In it, the al Qaeda leader unambiguously declared that "it is the duty of Muslims to prepare as much force as possible to terrorize the enemies of God."<sup>33</sup> When asked several months later by a Pakistani journalist whether al Qaeda was "in a position to develop chemical weapons and try to purchase nuclear material for weapons" Bin Laden replied: "In answer, I would say that acquiring weapons for the defense of Muslims is a religious duty."<sup>34</sup>

Evidence of bin Laden's continued interest in nuclear weaponry again surfaced just six weeks after the 9/11 attacks with the arrests of two Pakistani nuclear scientists—Sultan Bashiruddin Mahmood and Abdul Majeed. In August 2001, the scientists had held three days of meetings with bin Laden, Zawahiri and other top al Qaeda officials at its secret headquarters located near Kabul, Afghanistan. Although their discussions ranged widely to include chemical and biological weapons, Mahmood told his interrogators that bin Laden was specifically interested in nuclear weapons. Al Qaeda supposedly had acquired some nuclear material from an affiliated jihadi movement in Central Asia, the Islamic Movement of Uzbekistan (IMU), and Mahmood's opinion was solicited on its suitability for use in an explosive device. According to Graham Allison,

Mahmood explained to his hosts that the material in question could be used in a dirty bomb but could not produce a nuclear explosion. Al-Zawahiri and the others then sought Mahmood's help in recruiting other Pakistani nuclear experts who could provide uranium of the required purity, as well as assistance in constructing a nuclear weapon. Though Mahmood characterized the discussions as "academic," Pakistani officials indicated that Mahmood and Majeed "spoke extensively about weapons of mass destruction" and provided detailed responses to bin Laden's questions about the manufacture of nuclear, biological, and chemical weapons.<sup>35</sup>

Al Qaeda's desire to develop at least some kind of nuclear weapons capability were again revealed in January 2002 when CNN reporters discovered in Kabul a 25-page document containing designs for such a device.<sup>36</sup> Further, more recent evidence suggests that bin Laden has not completely abandoned his quest to acquire a nuclear weapon, with many statements posted to various Internet forums over the last several years encouraging followers to aid in this quest. He also points to a religious sanction for this—as Michael Scheuer, the former head of the CIA's bin Laden unit and author of the seminal work on bin Laden, *Through Our Enemies' Eyes*, noted in a 2004 interview broadcast on the CBS investigative news show "60 Minutes," the al Qaeda leader received permission in May 2003 from an influential Saudi cleric, Sheikh Nasir bin Mahid al-Fahd, to use precisely such a weapon against the U.S.<sup>37</sup>



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In addition to its nuclear ambitions, al Qaeda has also actively sought to develop a variety of chemical and biological weaponry.<sup>38</sup> It was of course bin Laden's alleged development of chemical warfare agents for use against U.S. forces in Saudi Arabia that was cited by the Clinton Administration in August 1998 to justify the controversial American cruise missile attack on the al-Shifa pharmaceutical plant in Khartoum, Sudan.<sup>39</sup> The movement's efforts in the biological warfare realm appear to have begun in earnest with a memo written by al-Zawahiri on 15 April 1999 to Muhammad Atef, then-deputy commander of al Qaeda's military committee. Citing articles published in *Science*, the *Journal of Immunology*, and the *New England Journal of Medicine*, as well as information gleaned from books such as *Tomorrow's Weapons* (1964), *Peace or Pestilence* (1949), and *Chemical Warfare* (1924), Zawahiri outlined his thoughts on the particular attraction of biological weapons ad seriatim:

- a) The enemy started thinking about these weapons before WWI. Despite their extreme danger, we only became aware of them when the enemy drew our attention to them by repeatedly expressing concerns that they can be produced simply with easily available materials . . . .
- b) The destructive power of these weapons is no less than that of nuclear weapons.
- c) A germ attack is often detected days after it occurs, which raises the number of victims.
- d) Defense against such weapons is very difficult, particularly if large quantities are used . . .

I would like to emphasize what we previously discussed—that looking for a specialist is the fastest, safest, and cheapest way [to embark on a biological- and chemical-weapons program].<sup>40</sup>

One of the specialists thus recruited was a U.S.-trained Malaysian microbiologist named Yazid Sufaat. A former captain in the Malaysian army, Sufaat graduated from California State University in 1987 with a degree in biological sciences. He later joined al-Jemaah al-Islamiya (the "Islamic Group"), an al Qaeda affiliate operating in Southeast Asia, and worked closely with its military operations chief, Riduan Isamuddin—better known as Hambali—and with Hambali's al Qaeda handler, Khalid Sheikh Mohammed (KSM). In January 2000, Sufaat also played host to two of the 9/11 hijackers, Khalid Almihdar and Nawaf Alhazmi, who stayed in his Kuala Lumpur condominium. Later that year, Zacarias Moussaoui, the alleged "20<sup>th</sup> hijacker" who was sentenced in 2006 to life imprisonment by a federal district court in Alexandria, Virginia, stayed with Sufaat, too. Under KSM's direction, Hambali and Sufaat set up shop at an al Qaeda camp in Kandahar, Afghanistan, where their efforts focused on the weaponization of anthrax.<sup>41</sup> Although the two made some progress, bio-warfare experts believe that on the eve of 9/11 al Qaeda was still at least two to three years away from producing a sufficient quantity of anthrax to use as a weapon.<sup>42</sup> Sufaat's arrest in late 2001, however, may not have entirely de-railed al Qaeda's bio-terror efforts. When KSM himself was apprehended two years later, he was found hiding in the Rawalpindi home of a Pakistani bacteriologist—who has since disappeared.<sup>43</sup>

Prior to 9/11, a separate team of al Qaeda operatives reportedly had been engaged in a parallel R&D effort to produce ricin and chemical warfare agents at the movement's Derunta camp, near the eastern Afghan city of Jalalabad. The Derunta facility reportedly included



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laboratories and a school that trained a handpicked group of terrorists in the use of chemical and biological weapons. Its director was an Egyptian, Midhat Mursi (also known as Abu Kebab), and the school's teachers included Sufaat and a Pakistani microbiologist. When U.S. military forces overran the camp, they found equipment required to produce the toxin ricin as well as castor oil (ricin is derived from castor beans). Both Mursi and a colleague named Menad Benchellali managed to avoid capture. Although Mursi remains at large, Benchellali, a French national of Algerian heritage, was arrested in 2002. After fleeing Afghanistan, he had initially settled in the Pankisi Gorge, an area in Georgia that borders Chechnya, but became homesick. Once back in France, Benchellali became involved in a terrorist cell that had planned to bomb the Russian Embassy in Paris. Acting on information provided by French authorities following Benchellali's arrest, police in Britain and Spain detained 29 suspects from North African countries suspected of ties to al Qaeda and an affiliated Kurdish-Iraqi terrorist group, Ansar al-Islam.<sup>44</sup> Evidence seized by British police in the search of one suspect's apartment in North London included both recipes and ingredients for several toxins—including ricin, cyanide, and botulinum.<sup>45</sup> British authorities believe that the ricin production instructions had been downloaded from an American white supremacist website and then photocopied on a machine at a well-known radical London mosque.<sup>46</sup> A police raid the previous year on a house in Norfolk used by another cell of Northern Africans also found recipes for ricin and other poisons along with information about explosives and instructions for making bombs.<sup>47</sup>

A common thread in all these cases—whether involving actual al Qaeda operatives or others with potential links to the movement—is a strong interest in, and clear willingness to use, these non-conventional weapons that was not, however, always matched by the capabilities required either to fabricate or effectively disseminate them. As CBRN terrorism expert John Parachini, argued,

Demonstrating interest in something is far different both from, first, experimenting with it and, second, mastering the procedures to execute an attack. Gaining access to materials is certainly a major barrier, but it is not the only one. Delivering toxic materials to targets in sufficient quantities to kill in the same fashion as explosives is not easy.<sup>48</sup>

Indeed, as mesmerizingly attractive as these non-conventional weapons are to some terrorists, they have historically proven frustratingly disappointing to whoever has tried to use them. Despite the extensive use of poison gas during World War I, for instance, this weapon accounted for only five percent of all casualties in that epic conflict. Even in more recent times, such as during the 1980s when Iraq used chemical weapons in its war against Iran, less than one percent (5,000) of the 600,000 Iranians who perished were killed by gas. The wartime use of biological weapons has a similarly checkered record. On at least eleven occasions before and during World War II, the Imperial Japanese Army employed germ agents as diverse as cholera, dysentery, bubonic plague, anthrax and paratyphoid, disseminated in both water and air. Not only did these fail to kill as many Chinese soldiers as the Japanese had hoped, but on at least one occasion—the 1942 assault on Chekiang—10,000 Japanese soldiers themselves were affected, of whom some 1,700 died. "The Japanese program's principal defect, a problem to all efforts so far," David Rapoport concluded, was "an ineffective delivery system."<sup>49</sup> The difficulties of using



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germs as weapons is further substantiated by the work of Seth Carus, a researcher at the National Defense University in Washington, D.C. Over the past decade, Carus has compiled perhaps the most authoritative accounting of the use of biological agents by a wide range of adversaries, including terrorists, government operatives, ordinary criminals, and the mentally unstable. His exhaustive database, which begins in 1900, reveals that during the 20<sup>th</sup> century a grand total of ten people were killed and fewer than 900 made ill as a result of some 180 acts of either bio-terrorism or bio-crime. The majority of these incidents, moreover, involved the selective poisoning of specific people rather than the wholesale, indiscriminate attacks most often imagined.<sup>50</sup>

### **The Newly Emerging Terrorist CBRN Paradigm: Shaking Society's Foundations**

Significantly, the post-9/11 generation of al Qaeda terrorists does not appear to have been deterred either by the formidable challenges of fabricating and then effectively weaponizing and disseminating biological agents. Indeed, two separate plots that were uncovered and derailed in the United Kingdom respectively in 2003 and 2004 underscore how biological and radiological weapons continue to attract terrorist interest despite these hurdles and how such weapons are admired perhaps even more for their psychological impact than lethal potential.

The first incident, which was cited in the brief discussion above concerning al Qaeda's biological weapons efforts, involves the so-called "ricin plot" orchestrated by a 31 year-old al Qaeda operative named Kamel Bourgass. From what we know of Bourgass, he was born in May 1973 in the Algerian province of Souk Haras: interestingly, when interrogated by authorities, he was unable to provide a specific day for his birth. Conscripted into the national police, where he served for a year, Bourgass subsequently fled Algeria for Britain. He arrived illegally in Dover on the back of a truck in January 2000 and immediately made his way to London's then-notorious Finsbury Park Mosque—a well-known center of Islamist extremism, where Richard Reid (the "shoe bomber" who tried to blow up an American Airlines plane bound from Paris to Miami in December 2001 with explosives concealed in his sneaker) and Zacarias Moussaoui (the alleged "20<sup>th</sup> 9/11 hijacker") had also worshipped. Bourgass applied for asylum using the name of Nadir Habra, but his claim was rejected and then denied on appeal in November 2001. Bourgass then disappeared. According to his testimony in court, he claimed to have spent the following three years working in a London pizzeria and selling clothes. What is known is that throughout that time he drew state welfare benefits and supplemented his income with petty thievery. Indeed, in the summer of 2002 Bourgass was arrested for shoplifting in Romford, Essex. Presenting false documentation to the police and court, he avoided identification and thus deportation by giving his name as Kamel Bourgass and not Nadir Habra—the name he used on his asylum application.<sup>51</sup>

Coincidentally, about the same time that Bourgass was being charged with shoplifting, British anti-terrorist police in July 2002 began an investigation into North African criminal networks working in Britain suspected of credit card fraud. Their attention had been drawn to these gangs by reports that the proceeds were being used to fund terrorism. Meanwhile, a parallel investigation was unfolding that same month that led to the aforementioned police raid on a house in Thetford, Norfolk, where the recipes for ricin and other poisons were discovered. A third—simultaneous, but unrelated—police operation, also cited above, had resulted in the arrest of an Algerian named Mohamed Meguerba. But, after making bail, Meguerba decamped to



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Algeria, where he was arrested by police there two months later. Under interrogation, Meguerba told the Algerian authorities that he and a group of fellow expatriates in London had been planning to carry out attacks using ricin in Britain and that sufficient quantities of the biological weapon had been produced to fill two small jars of skin cream. The plot's leader, Meguerba claimed, was Bourgass.<sup>52</sup>

Based on information that Meguerba provided to his Algerian interrogators, in January 2003 British police raided the apartment in north London where Bourgass allegedly had made ricin. Initial reports that small amounts of the biological agent were discovered by police in the apartment were later proven false following detailed scientific analysis. However, even if no actual ricin was found, the means and utensils required to produce it were certainly present. In addition to four sets of recipes or instructions in Arabic for making ricin<sup>53</sup> as well as other toxins, along with a mortar and pestle which appeared to contain chemical residue, 20 castor beans (the raw ingredient needed to produce ricin), cherry and apple seeds (which are used in the production of cyanide), and a CD-ROM containing instructions for the fabrication of homemade explosives were seized by police. A nationwide manhunt was subsequently launched for Bourgass. Coincidentally, nine days later police staged what they believed to be a routine raid on an apartment in Manchester where illegal immigrants were thought to be living. Unaware that Bourgass himself was among the persons apprehended at the apartment, the arresting police officers neglected to take any of the special precautions that are standard operating procedure for handling terrorist suspects, failing even to handcuff Bourgass or any of the others. Desperate to escape before he could be identified, Bourgass suddenly grabbed a kitchen knife from a table around which he and the officers were gathered, and in the ensuing struggle he stabbed one policeman to death and wounded three others. In June 2004, Bourgass was convicted of murder and the following April was convicted of "conspiracy to commit a public nuisance by the use of poisons, and/or explosives." However, he was acquitted of charges of conspiracy to commit murder using ricin—as were his four indicted co-conspirators from the London apartment.<sup>54</sup>

According to police documents and testimony at his second trial, Bourgass's plan was to target businessmen and holidaymakers using the Heathrow Express, the train that travels throughout the day between Heathrow Airport and London's Paddington Station. Maps of its route were found in the home of one of Bourgass's co-conspirators. Their plan was to surreptitiously paint or swab door handles on the train with the ricin in hopes of poisoning the victims when they touched the substance with the fingers and palms of their hand.<sup>55</sup> Their objective, according to prosecutors, was not necessarily to kill as much as to "cause mayhem and widespread panic."<sup>56</sup> Indeed, according to the FBI, ricin is ranked as the third most toxic known substance, behind only plutonium and botulism, and a minute amount of it can kill in minutes if inhaled, ingested or absorbed through the skin. However, the agent's molecules are in fact too large to be easily absorbed through the skin from ordinary tactile contact, and thus as lethal as ricin is, it is a more difficult weapon with which to kill or injure than is commonly assumed. "Although the ricin might not have killed anyone," a British Home Office official explained, "it would still have been regarded as a major terror coup" to carry out an attack with such a weapon.<sup>57</sup> This was also the conclusion reached by Peter Clarke, Deputy Assistant Commissioner at Scotland Yard and the head of the police anti-terrorist branch. "It is clear had Bourgass been allowed to continue his plot undetected," he noted, "some people would have been made very ill



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and quite possibly have died. [Furthermore] It would have been hard to underestimate the fear and disruption this plot could have caused across the country."<sup>58</sup>

Significantly, the plot had al Qaeda's fingerprints all over it. British authorities are convinced that Bourgass left the UK at some point during the three years specifically to travel to Afghanistan to train in an al Qaeda facility and thereby acquire the expertise necessary to concoct and disseminate ricin and other poisons. Indeed, according to intelligence sources, witnesses claimed that Bourgass had been singled out by al Qaeda commanders for specialized, advanced training in the making and use of poisons.<sup>59</sup> Further, Meguerba himself also confessed to having been trained in al Qaeda camps in Afghanistan and to have "had numerous personal meetings with al Qaeda chief Osama bin Laden" as well.<sup>60</sup> Hence, rather than the homegrown, organic radicalization problem that is often assumed to be behind many of the most recent European terrorist attacks and plots, the evidence linking Bourgass and Meguerba to al Qaeda arguably suggests a more conscious and deliberate strategy of subversion and the insertion of terrorist sleepers into Western society and Muslim Diaspora communities. Equally disturbing is the realization that less than a decade ago, the same group of terrorists would more likely have been sitting in a basement attempting to fabricate crude pipe bombs and other conventional, explosive devices and not concoct and disseminate highly toxic biological weapons like ricin.

In sum, today's jihadi terrorists not only seem to be thinking increasingly in terms of non-conventional weapons, but they also appear to fully appreciate the potentially corrosive and unsettling psychological impact that such attacks can have on society—even if such weapons fail to kill or physically harm large numbers of persons. Prominent in their calculations is the likely assumption that attacks with these weapons can substantially enhance the fear and intimidation that terrorism (by definition) seeks to produce in a targeted society. Doubtless present in their calculations as well are the potential effects that such non-conventional weapons could have in undermining public confidence and trust in the ability of the government and authorities to prevent and protect society against such attacks. "This was a hugely serious plot," Peter Clarke noted, "because what it had the potential to do was to cause real panic, fear, disruption and possibly even death to the public."<sup>61</sup>

The conviction in November 2006 of Dhiren Barot (also known as Issa al-Hindi or Issa al-Britani), an al Qaeda operative who planned to use a radioactive "dirty bomb" in a series of attacks on both public gathering places and key economic targets in both Britain and U.S.—another UK terrorist plot involving a clear al Qaeda pedigree—underscores contemporary terrorists' affinity to such a strategy. According to prosecutors in Barot's case, his motive was indeed less wanton, homicidal killing than the creation of "injury, fear, terror and chaos."<sup>62</sup> Moreover, Barot and his cell's attraction to a non-conventional weapon paradoxically may have been a reflection of, or to compensate for, their inability to stage a more sophisticated or lethal conventional attack. Accordingly, the non-conventional weapons threat today may counter-intuitively be not as much ruthless terrorist use of some mass destruction weapon against an entire city and its population as the discrete, calculated terrorist use of some chemical, biological or radiological device to achieve far-reaching psychological effects or provoke a specific reaction from the targeted country.



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## **Conclusion**

The CBRN threat we face today from al Qaeda is thus two-pronged: attacks using non-conventional weapons that are meant to kill and injure en masse alongside less lethal attacks, conceived less for their killing potential than for their de-stabilizing psychological repercussions. In this respect, it should be stressed that a limited terrorist attack involving not a WMD per se, but a deliberately small scale non-conventional chemical, biological or radiological weapon, could have disproportionately enormous consequences, generating unprecedented fear and alarm and thus serving the terrorists' purpose(s) just as well as a larger weapon or more ambitious attack with massive casualties could. Accordingly, the issue here may not be as much ruthless terrorist use of some WMD as calculated terrorist use of some unconventional weapon to achieve far-reaching psychological effects in a particular target audience. We may therefore be missing the point and sidestepping the real threat posed by terrorists in this regard. It will likely not be the destruction of an entire city—as portrayed by fictional thriller-writers and government officials alike—but the far more deliberate and delicately planned use of a chemical, biological or radiological agent for more discreet purposes.



## Notes

- <sup>1</sup> The exact number of deaths caused by the 9/11 attacks is believed to be 2,976. Of these, the New York City Medical Examiner's Office concluded that 2,752 were killed by American Airlines Flight 11 and United Airlines Flight 75 that struck the World Trade Center towers. Forty people were killed when United Airlines Flight 93 crashed into a rural field in Somerset County, Pennsylvania, and 184 persons were killed when American Airlines Flight 77 struck the Pentagon. The numbers of persons seriously injured was surprisingly low and defied initially dire expectations. According to a RAND Corporation estimate, no more than about 250 persons required hospitalization for one day or more as a result of the attacks. See Lloyd Dixon and Rachel Kaganoff Stern, *Compensation Losses From The 9/11 Attacks* (Santa Monica, CA: RAND Corporation, MG-264-ICJ, 2004), pp. 15-16. The RAND report cites New York City Medical Examiner's Office, Office of Chief Medical Examiner, 'World Trade Center Operational Statistics', April 2004 as the source from which this data was obtained. See also, National Commission on Terrorist Attacks Upon the United States, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States, Authorized Edition* (New York & London: W.W. Norton, 2004), p. 552, footnote 188.
- <sup>2</sup> Brian M. Jenkins, 'The Organization Men: Anatomy of a Terrorist Attack,' in James F. Hoge, Jr. and Gideon Rose, *How Did This Happen? Terrorism and the New War* (NY: Public Affairs, 2001), p.5.
- <sup>3</sup> Some 440 persons perished in a 1978 fire deliberately set by terrorists at a movie theater in Abadan, Iran.
- <sup>4</sup> Bruce Hoffman, *Lessons of 9/11: Statement Submitted for the Committee Record to the United States Joint September 11, 2001 Inquiry Staff of the House and Senate Select Committees on Intelligence, 8 October 2002* (Santa Monica, CA: RAND Corporation, 2002), p. 2.
- <sup>5</sup> Quoted in Ron Suskind, *The One Percent Doctrine: Deep Inside America's Pursuit of Its Enemies Since 9/11* (New York: Simon & Schuster, 2006), p. 62.
- <sup>6</sup> Ibid.
- <sup>7</sup> For reasons of clarity and precision, the term CBRN is preferred to the more commonly used, yet potentially misleading term, "weapons of mass destruction" or WMD. With the exception of nuclear weapons, none of these unconventional weapons by itself is, in fact, capable of wreaking mass destruction, at least not in structural terms. Indeed the terminology "weapons of mass casualties" may be a more accurate depiction of the potentially lethal power that could be unleashed by chemical, biological, or non-explosive radiological weapons. The distinction is more than rhetorical and is critical to understanding the vastly different levels of technological skills and capabilities, weapons expertise, production requirements, and dissemination or delivery methods needed to undertake an effective attack using either chemical or biological weapons in particular. See Advisory Panel To Assess Domestic Response Capabilities For Terrorism Involving Weapons Of Mass Destruction, *First Annual Report to The President and The Congress* (Washington, D.C.: RAND Corporation, 15 December 1999), pp. ii-iii.
- <sup>8</sup> Radiological terrorism involves *contamination* with readily available radioactive materials, for instance those used in medicine and commerce, as compared with nuclear terrorism, which implies an explosion caused by the chain reaction created by fissionable materials.
- <sup>9</sup> Some observers argued that these groups were in fact part of a world-wide communist plot against the West orchestrated by Moscow and implemented by its client states. See especially Claire Sterling, *The Terror Network: The Secret War of International Terrorism* (New York: Holt, Rinehart and Winston, 1981).
- <sup>10</sup> See, for instance, "Remarks By The President to 17<sup>th</sup> Annual Legislative Conference Of The International Association of Fire Fighters," Hyatt Regency Hotel, Washington, D.C., 15 March 1999, p. 3 at <http://www.usia.gov/topical/pol/terror/99031502.html>, where President Clinton explained: "Since 1996, the number of weapons of mass destruction threats called in to fire fighters, police and the FBI has increased fivefold. The threat comes not just from conventional weapons, like the bomb used in Oklahoma City, but also from chemical weapons, like the nerve gas agent that killed 12, but injured thousands in Tokyo, in the subway, just four years ago; and even from biological weapons that could spread deadly disease before anyone even realized that attack has occurred. I have been stressing the importance of this issue, now, for some time. As I have said repeatedly, and I want to say again to you, I am not trying to put any American into a panic over this, but I am determined to see that we have a serious, deliberate, disciplined, long-term response to a legitimate potential threat to the lives and safety of the American people."
- <sup>11</sup> See Bruce Hoffman, *Inside Terrorism* (New York: Columbia University Press, 2<sup>nd</sup> edition, 2006), pp. 81-86.
- <sup>12</sup> Quoted in the Report of the National Commission on Terrorism p. 2. XXX
- <sup>13</sup> Brian Michael Jenkins, *International Terrorism: The Other World War* (Santa Monica, CA: The RAND Corporation, R-3302-AF, November 1985), p. 12.



- <sup>14</sup> For example, the 1985 hijacking of the Italian cruise ship, the *Achille Lauro*, by Palestinian terrorists as opposed to the more typical terrorist hijacking of passenger aircraft.
- <sup>15</sup> For example, it was reported in 1979 that German Red Army Faction terrorists were being trained at Palestinian camps in Lebanon in the use of bacteriological weapons. Additional information of the group's reputed interests in this respect came to light as a result of a police raid of an RAF safe-house in Paris that uncovered a miniature laboratory containing a culture of *Clostridium botulinum*, used to create a botulinum toxin, alongside earlier threats by the group to poison water supplies in 20 Germany towns if three radical lawyers were not permitted to defend an imprisoned RAF member. Subsequent investigation, however, revealed that these efforts likely never occurred. For the most authoritative account and analysis, see Terence Taylor and Tim Trevan, "The Red Army Faction (1980)," in Jonathan B. Tucker (ed.), *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons* (Cambridge, MA: MIT Press, 2000), pp. 107-113.
- <sup>16</sup> See "Violence: a buyer's market," *Jane's Defence Weekly*, 12 May 1990, pp. 909-911. A similar report is detailed in W. Seth Carus, *Bioterrorism and Biocrimes: The Illicit Use of Biological Agents in the 20th Century* (Washington, D.C.: Center for Counterproliferation Research, National Defense University, August 1998, pp. 175-176.
- <sup>17</sup> The attack—like Aum's five years later—was relatively crude: thus again suggesting the impediments to mounting more sophisticated operations employing CBRN weapons. In this instance, several large drums of the chemical were transported from a nearby paper mill land positioned around the camp's perimeter. When the wind currents were judged right, the attackers released the gas, which wafted into the camp. The use of this weapon was verified personally by the author who visited the destroyed encampment in December 1997 and saw the drums of chlorine gas used in the attack, that had been left on the outskirts of the camp. It was further confirmed in the course of in-depth interviews with more than a dozen serving or retired senior Sri Lankan military commanders (including an officer who was present at the East Kiran camp when the attack occurred), intelligence officials, police officers and captured LTTE cadre conducted in Colombo, Jaffna, and Batticaloa, Sri Lanka by the author in December 1997 and January 2000.
- <sup>18</sup> Admittedly, these were only those incidents or plots that we both *definitely* knew about and that were also been reported in open, published sources.
- <sup>19</sup> See, for example, the studies conducted by The RAND Corporation during the 1970s for Sandia National Laboratories and in particular, Gail Bass, Brian Jenkins, et. al, *Motivations and Possible Actions of Potential Criminal Adversaries of U.S. Nuclear Programs* (Santa Monica, CA: The RAND Corporation, R-2554-SL, February 1980).
- <sup>20</sup> See, for example, the discussion in Peter deLeon, Bruce Hoffman, et. al, *The Threat of Nuclear Terrorism: A Reexamination* (Santa Monica, CA: The RAND Corporation, N-2706, January 1988), pp. 4-6.
- <sup>21</sup> Walter Laqueur, *Terrorism* (London; Weidenfeld and Nicolson, 1977), p. 231.
- <sup>22</sup> Jeffrey D. Simon, *Terrorists and the Potential Use of Biological Weapons: A Discussion of Possibilities* (Santa Monica, CA: RAND, R-3771-AFMIC, December 1989), p. 12.
- <sup>23</sup> Robert L. Beckman, "Rapporteur's Summary," in Alexander and Leventhal, *Nuclear Terrorism: Defining The Threat*, p. 13.
- <sup>24</sup> Brian M. Jenkins, "Is Nuclear Terrorism Plausible?," in *Ibid.*, p. 31.
- <sup>25</sup> Brian Michael Jenkins, "International Terrorism: A New Mode of Conflict" in David Carlton and Carlo Schaerf (eds.), *International Terrorism and World Security* (London: Croom Helm, 1975), p. 15.
- <sup>26</sup> Brian Jenkins, *Will Terrorists Go Nuclear?* California Seminar on Arms Control and Foreign Policy, paper no. 64 (Los Angeles: Crescent Publications, 1975)—also published under the same title as P-5541 (November 1975) in the RAND Corporation Paper series, pp. 6-7.
- <sup>27</sup> J. Bowyer Bell, *A Time of Terror: How Democratic Societies Respond to Revolutionary Violence* (New York: Basic Books, 1978), p. 121.
- <sup>28</sup> Brian Michael Jenkins, *The Likelihood of Nuclear Terrorism* (Santa Monica, CA: The RAND Corporation, P-7119, July 1985), p. 6.
- <sup>29</sup> Walter Laqueur, *The Age of Terrorism* (Boston & Toronto: Little, Brown, 1987), p. 319.
- <sup>30</sup> Quoted in Gerald McKnight, *The Mind of the Terrorist* (London: Michael Joseph, 1974), p. 179.
- <sup>31</sup> Walter Laqueur, 'Postmodern Terrorism,' *Foreign Affairs*, vol. 75, no. 5 (September-October 1996), p. 34.
- <sup>32</sup> See Graham Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (New York: Times Books, 2004), p. 3; Peter Bergen, "The Bin Laden Trial: What Did We Learn?," *Studies in Conflict & Terrorism*, vol. 24, no. 6 (November-December 2001), p. 431; Benjamin Weiser, "U.S. Says Bin Laden Aide Tried to Get Nuclear



- Material," *New York Times*, 26 September 1998; and, Michael Grunwald, "U.S. Says Bin Laden Sought Nuclear Arms," *Washington Post*, 26 September 1998.
- <sup>33</sup> Quoted in Ben Venzke and Aimee Ibrahim, *The al-Qaeda Threat: An Analytical Guide to al-Qaeda's Tactics and Targets* (Alexandria, VA: Tempest Publishing, 2003), p. 52.
- <sup>34</sup> "Osama bin Laden—Interview—23 December 1998, Rahimullah Yusufzai Interview" in *Ibid.*, p. 53.
- <sup>35</sup> Allison, *Nuclear Terrorism*, pp. 20-23.
- <sup>36</sup> CNN.Com, "Live From Afghanistan—Was Al Qaeda Working on a Super Bomb?," 24 January 2004 accessed at <http://www.isis-online.org/publications/terrorism/transcript.html>.
- <sup>37</sup> See Dafna Linzer, "Nuclear Capabilities May Elude Terrorists, Experts Say," *Washington Post*, 29 December 2004; and, "Bin Laden seeking nukes," *Toronto Star*, 24 November 2004.
- <sup>38</sup> John Parachini, 'Putting WMD Terrorism into Perspective,' *The Washington Quarterly*, vol. 26, no. 4 (Autumn 2003), p. 44
- <sup>39</sup> See both the contemporary accounts of the explanation for the strike by Barbara Crossette, et al., "U.S.. Says Iraq Aided Production of Chemical Weapons in Sudan," *New York Times*, 25 August 1998; Michael Evans, "Iraqis linked to Sudan Plant," *The Times* (London), 25 August 1998; James Risen, "New Evidence Ties Sudanese To Bin Laden, U.S. Asserts," *New York Times*, 4 October 1998; Gregory L. Vistica and Daniel Klaidman, "Tracking Terror," *Newsweek*, 19 October 1998 and the "insider" account published by two members of President Clinton's National Security Council staff, Daniel Benjamin and Steven Simon, *The Age of Sacred Terror* (New York: Random House, 2002), pp. 259-262 & 353-365.
- <sup>40</sup> Quoted in Alan Cullison, "Inside Al-Qaeda's Hard Drive," *The Atlantic Monthly*, vol. 294, no. 2 (September 2004), p. 62.
- <sup>41</sup> Alan Sipress, "Key Player in Nuclear Trade Ring Found Hospitable Base in Malaysia," *Washington Post*, 24 February 2004; and, Judith Miller, "U.S. Has New Concerns About Anthrax Readiness," *New York Times*, 28 December 2003.
- <sup>42</sup> Eric Lipton, "Qaeda Letters Are Said to Show Pre-9/11 Anthrax Plans," *New York Times*, 21 May 2005.
- <sup>43</sup> Barton Gellman, "Al Qaeda Near Biological, Chemical Arms Production," *Washington Post*, 23 March 2003.
- <sup>44</sup> *Ibid.*; and, Joby Warrick, "An Al Qaeda 'Chemist' and the Quest for Ricin," *Washington Post*, 5 May 2004.
- <sup>45</sup> Alan Cowell, "One Conviction in Plot to Spread Deadly Toxins, but 8 Go Free," *New York Times*, 13 April 2005.
- <sup>46</sup> Information provided by British authorities.
- <sup>47</sup> Duncan Campbell and Rosie Cowan, "Ricin Plot: Terror trail that led from Algeria to London," *The Guardian* (London), 14 April 2005.
- <sup>48</sup> John Parachini, "Putting WMD Terrorism into Perspective," *Washington Quarterly*, vol. 26, no. 4 (Autumn 2003), p. 39.
- <sup>49</sup> David Rapoport, "Terrorism and Weapons of the Apocalypse," *National Security Studies Quarterly*, vol. v, issue 3 (Summer 1999), pp. 52-54.
- <sup>50</sup> W. Seth Carus, *Working Paper: Bioterrorism and Biocrimes: The Illicit Use of Biological Agents Since 1900* (Washington, D.C.: Center for Counterproliferation Research, National Defense University, February 2001 Revision), pp. v, 10, 11, & 21.
- <sup>51</sup> See "The Many names of danger man Bourgass," *Manchester Evening News*, 15 April 2005; "Pack of lies told by a ruthless killer," *Manchester Evening News*, 15 April 2005; "Ricin plot: The Bourgass case—How the parties compare," *The Guardian* (London), 15 April 2005; Neville Dean and Nick Allen, "Mosque's Terrorist Roll Call," *Press Association Newswire*, 7 February 2006; and, John Steele and Sue Clough, "How Jihad network's tentacles reached the back streets of Gloucester," *Daily Telegraph* (London), 14 April 2005.
- <sup>52</sup> "CHRONOLOGY—Britain's thwarted chemical attack plot," Reuters (London), 14 April 2005. See also, Rosie Cowan and Duncan Campbell, "Detective murdered by an obsessive loner," *The Guardian*, 14 April 2005; Karen McVeigh, "Killer and the chemical weapons factory in a kitchen," *The Scotsman* (Edinburgh), 14 April 2005; Kate Southern, "Terror plot man had Wood Green Base," *Newsquest Media Group Newspapers*, 15 April 2005; "Terror police find deadly poison," *BBC News World Edition*, 7 January 2003 accessed at [http://www.bc.co.uk/2/hi/uk\\_news/2636099.stm](http://www.bc.co.uk/2/hi/uk_news/2636099.stm); and, James Tourgout, "Killer was on the ruin in Weymouth," *Newsquest Media Group Newspapers*, 15 April 2005.
- <sup>53</sup> During the trial, evidence was presented that scientists working at the British Ministry of Defence's chemical warfare laboratories at Porton Down in Wiltshire were able to produce enough ricin and cyanide using Bourgass's recipes to kill hundreds of people if properly employed. McVeigh, "Killer and the chemical weapons factory in a kitchen." 14 April 2005.



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- <sup>54</sup> Ibid. See also, Ben English, "Plot to poison London," *Herald Sun* (Victoria, Australia), 15 April 2005; and, Man admits UK-US terror bomb plot, 12 October 2006 [http://newsvote.bbc.co.uk/mpapps/pagetools/print/news.bbc.co.uk/2/hi/uk\\_news/6044](http://newsvote.bbc.co.uk/mpapps/pagetools/print/news.bbc.co.uk/2/hi/uk_news/6044).
- <sup>55</sup> Michael Isikoff and Mark Hosenball, "Terror Watch: What Ricin? Colin Powell and British Authorities pointed to a poison lot as justification for the war on Iraq. But a jury says the case didn't add up," *Newsweek Web Exclusive*, 13 April 2005.
- <sup>56</sup> Southern, "Terror plot man had Wood Green Base," 15 April 2006.
- <sup>57</sup> Quoted in Roddy Ashworth, "Ricin gang targeted Heathrow Express," *The Express on Sunday*, 17 April 2005.
- <sup>58</sup> Southern, "Terror plot man had Wood Green Base," 15 April 2005.
- <sup>59</sup> Jenny Booth, "Profile: true identity of ricin plotter remains a mystery," *Times Online*, 13 April 2005 accessed at <http://www.timesonline.co.uk/printFriendly/0,,1-2-1567904-2,00.html>. See also, Rosie Cowan and Duncan Campbell, "Detective murdered by an obsessive loner," *The Guardian*, 14 April 2005; McVeigh, "Killer and the chemical weapons factory in a kitchen." 14 April 2005; and, Tourgout, "Killer was on the ruin in Weymouth," 15 April 2005.
- <sup>60</sup> McVeigh, "Killer and the chemical weapons factory in a kitchen." 14 April 2005.
- <sup>61</sup> Quoted in Ibid.
- <sup>62</sup> BBC News, "Man admits UK-US terror bomb plot," 12 October 2006 accessed at [http://newsvote.bbc.co.uk/mpapps/pagetools/print/news.bbc.co.uk/2/hi/uk\\_news/6044](http://newsvote.bbc.co.uk/mpapps/pagetools/print/news.bbc.co.uk/2/hi/uk_news/6044). See also Alan Cowell, "British Muslim Sentenced in Terror Attacks," *New York Times*, 8 November 2006.