

Al-Qaeda's Quest for Non-Conventional Weapons, 1996-2006

The history behind the hype

by Anne Stenersen



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Department of Culture Studies and Oriental Languages

University of Oslo

Summary

The aim of the thesis has been to describe the nature of al-Qaeda's interest in non-conventional weapons, as reflected by the network's own statements and activities in the period from 1996-2006. The analysis has been divided into two parts: First, I have critically examined primary and secondary source material in order to develop a comprehensive understanding of the history of al-Qaeda's pursuit for non-conventional weapons. Second, I have discussed why there is a lack of chemical, biological, radiological and nuclear (CBRN) innovation within the al-Qaeda network.

The conclusion to the first part is that the al-Qaeda network's interest in using unconventional means appears much lower than commonly anticipated. Al-Qaeda's efforts have been concentrated on crude and easily obtainable CBRN materials, not on developing actual warfare agents. Also, a preference for conventional weapons and tactics is evident on all levels within the network. There are no strong indications that al-Qaeda's interest for non-conventional weapons has increased after 2001.

With regards to the lack of CBRN innovation, I conclude that the al-Qaeda network clearly lacks some of the characteristics typical of past 'CBRN terrorists', such as a millenarian ideology or an 'expressive attachment' to this particular type of weapon. In addition, however, I argue that al-Qaeda's networked structure itself prevents innovation, rather than promoting it. There are at least two possible explanations for this: first, the global nature of the network makes mobility an alternative to innovation; and second, al-Qaeda's loose organizational structure increases the need for carrying out operations that can immediately be identified with the al-Qaeda 'brand'.

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Preface

There are several people that have provided invaluable support during the process of writing this thesis. First and foremost, I am indebted to my colleagues in FFI's terrorism research group for sharing with me their insights and sources on al-Qaeda and militant Islamism, and for creating an inspiring and friendly working environment which I find truly unique. Secondly, my analysis of al-Qaeda's chemical, biological, radiological and nuclear (CBRN) documents would not be complete without an evaluation of their technical quality. Since I do not have the scientific background to make such an evaluation myself, I am indebted to Monica Endregard and her colleagues at the FFI's protection division for giving me comments and feedback on the nature of al-Qaeda's online CBRN manuals and discussions. Finally, I would like to thank my supervisor, Albrecht Hofheinz, for his useful comments on the draft of this thesis.

A note on transliteration

Arabic names and words appearing in the text have been transliterated according to the standard indicated below:

ا	'	د	d	Short vowels: a i u
ب	b	ذ	ḏ	
ت	t	ز	z	Long vowels: ā ī ū
ث	ṭ	ح	ḥ	
ج	j	غ	ḡ	<i>tā' marbūṭa</i> : -a (but -at in <i>iḏāfa</i>)
ح	ḥ	ف	f	
خ	ḫ	ق	q	
د	d	ك	k	
ڤ	ḍ	ل	l	
ر	r	م	m	
ز	z	ن	n	
س	s	ه	h	
ش	š	و	w	
ص	ṣ	ي	y	

Exceptions have been made for Arabic names with an established spelling standard in the English press, such as al-Qaeda (*al-qā'ida*) and Osama bin Laden (*Usāma bin Lādin*), as well as for Arabic words that have been imported into the English language, such as jihad (*jihād*) and the Koran (*al-qur'ān*). “Sun letters” have not been assimilated. In the literature list, the titles of Arabic documents are written with the Arabic script, with an English translation in parenthesis. Names of authors, newspapers, journals etc. are transliterated.

1 Introduction

*“We judge that there is a high probability that Al Qaida will attempt an attack using a CBRN weapon within the next two years.”*¹

-US government report to the United Nations (April 2003)

Presumably, few topics have been associated with more hype than al-Qaeda’s alleged quest for weapons of mass destruction. Ever since the late 1990s, it has been claimed that al-Qaeda is the ideal candidate for carrying out a destructive attack with non-conventional weapons against the West. The assumption is not based on hard evidence, such as the discovery of these weapons in al-Qaeda’s possession, or any evidence of serious efforts to obtain them. Neither is the assumption based on a critical or objective analysis of the role of chemical, biological, radiological and nuclear (CBRN) weapons in al-Qaeda’s ideology and strategy. Rather, it appears that the assumption is based on a widely held belief that al-Qaeda belongs to a ‘new breed of terrorists’ who would not hesitate to kill thousands of people in one single attack. While this label certainly helps demonize and dehumanize the ‘enemy’, it contributes neither to a very accurate understanding of the actor, nor to the real nature of the threat.

To date, few academic studies have aimed to thoroughly investigate the history behind this hype, based on a critical analysis of historical sources about the al-Qaeda network. This is not very surprising, however. Studies of terrorism and political violence have often tended to be policy-oriented, rather than aiming at contributing to the academic field. Literature on al-Qaeda and CBRN weapons, therefore, tends only to consider factors that ‘confirm’ al-Qaeda’s CBRN ambitions, while sources that reveal a more complex reality are ignored. Also, there have been few attempts to discuss the case of al-Qaeda in relation to other academic research into CBRN terrorism or innovation processes.

The overall aim of this thesis is to answer the following research question: *What is the nature of al-Qaeda’s interest in CBRN weapons, as reflected by statements and activities on various levels within the network between 1996-2006?* I do not intend to write a purely descriptive thesis, however; but also to discuss possible explanatory factors for why the al-Qaeda network has not been more innovative in the field of CBRN weapons. In order to create a framework for my analysis, I have reviewed existing literature on CBRN terrorism, and literature

¹ “Letter dated 17 April 2003 from the Permanent Representative of the United States of America to the United Nations addressed to the Chairman of the Committee”, *United Nations Security Council* (22 April 2003), <http://www.globalsecurity.org/security/library/report/2003/n0335167.pdf> (accessed 14 November 2007).

describing the process of innovation in militant organizations. While the existing literature considers a number of case studies of militant groups, the groups selected are relatively homogenous, hierarchical and locally based. In other words, there is currently a lack of empirical research into the process of innovation in diffuse and trans-national militant networks, and this is where I believe my case study of al-Qaeda will fill an important gap. However, the innovative capabilities of the al-Qaeda network have been discussed on a theoretical level, in particular in an article by Calvert Jones, “Al-Qaeda’s innovative improvisers: Learning in a diffuse transnational network” from 2006. Jones’ main argument, which is based on organizational theory research rather than on an empirical case study of al-Qaeda, is that al-Qaeda’s networked structure makes al-Qaeda more prone to innovation, but less capable of succeeding in its innovative efforts. My thesis will discuss the validity of Jones’ argument, and, on a more general level, contribute to a better understanding of how organizational dynamics affect the process of innovation.

My analysis is divided into two parts. First, I will examine al-Qaeda’s statements and activities on various levels within the network in order to develop a comprehensive understanding of the history of al-Qaeda’s interest in CBRN weapons. The sources include al-Qaeda’s official statements and publications, documents and equipment found in al-Qaeda’s camps in Afghanistan, accounts from witnesses and insiders, legal documents and CBRN-related discussions and training manuals posted on jihadi web pages. I have deliberately used a variety of different sources in order to better assess their validity and accuracy. The analysis is qualitative, but supported by statistics wherever appropriate. Second, I will discuss why there is a lack of CBRN innovation within the al-Qaeda network. The discussion will be based on three hypotheses that have been formulated based on existing literature about CBRN terrorism and innovation.

1.1 Terms and definitions

The object of this study has been labelled ‘al-Qaeda’, which is not a very good term to use analytically, but it has been used for a lack of a better and equally short alternative. What I mean by ‘al-Qaeda’ or ‘the al-Qaeda network’ is *militant islamists who follow Osama bin Laden’s ideology for a global jihadi struggle*. For the purposes of the analysis, I wanted not only to look at ‘traditional’ al-Qaeda, but also the diverse network of *al-Qaeda-inspired* groups and individuals. However, I did not want to include all types of militant islamist groups and individuals, because this would be too broad a group. Thomas Hegghammer has

defined three types of militant islamists: socio-revolutionary groups (Egyptian Islamic Jihad, etc.); national-separatist groups (Hezbollah, Hamas, Chechen separatists etc.); and finally global jihadists (al-Qaeda), which will be the focus of this study.² The study will therefore not include groups such as Chechen separatists or the Taliban, even though there has allegedly been cooperation between these groups and the al-Qaeda network. However, I shall include regionally based groups who fight for local agenda if they describe themselves as an ‘al-Qaeda branch’; today this is usually marked by incorporating the word ‘al-Qaeda’ into the group’s name, such as al-Qaeda in the Islamic Maghreb (*tanzīm al-qā’ida bi-bilād al-maġrib al-islāmī*).

Al-Qaeda can be described as a relatively loose network of individuals and groups who share the same ideology. One premise for my analysis is that operational decisions (such as the decision to acquire or use CBRN materials) can be initiated at any level in the network.³ For the purpose of my analysis, therefore, I have chosen to divide the al-Qaeda network into four distinct ‘layers’, adapted from Bruce Hoffman:⁴

1. Al-Qaeda central: Osama bin Laden and his close circle of aides and lieutenants, as well as prominent ideologues, strategic thinkers and theologians.
2. Al-Qaeda affiliates: Regionally based groups, such as the Islamic State of Iraq (*Dawlat al-‘Irāq al-‘Islāmiyya*) or al-Qaeda in the Islamic Maghreb.
3. Al-Qaeda locals: Semi-independent or independent small cells, including ‘home-grown radicals’.
4. Al-Qaeda sympathizers: Individuals supportive of al-Qaeda’s cause, but not necessarily through violent activity. An example of this category would be individuals who manage jihadi websites or online ‘media agencies’.

When referring to individuals, groups, websites and so forth associated with the al-Qaeda network, I have used terms that have been established in the research literature, such as ‘militant islamist’ or ‘jihadist’. The Arabic word *jihād* literally means ‘struggle’ or ‘effort’, but in this thesis I have used ‘jihad’ exclusively to denote al-Qaeda’s military struggle against

² Thomas Hegghammer, “En oversikt over islamistiske terroristgrupper”, in Bjørn Erik Rasch (ed.), *Islamistisk terrorisme* (Oslo: Abstrakt forlag, 2005): 20-52.

³ History shows that although operations were sometimes ordered, or at least approved by bin Laden’s close aides, it was often up to the local cell members to decide on the specific tactics and weapons to be used.

⁴ While Hoffman’s fourth level is labeled ‘Al-Qaeda network’ and consists of home-grown militants, I have labeled it ‘al-Qaeda sympathizers’, defined as individuals supporting al-Qaeda’s cause, but not necessarily through violent activity. I have used the term ‘Al-Qaeda network’ to refer to the four categories as a whole. It should be stressed that these categories first and foremost serve analytical purposes, and that it is not my intention to stigmatize anyone by labeling them ‘al-Qaeda’. Bruce Hoffman, *Inside terrorism* (New York: Columbia University Press, 2006): 285-288.

Islam's enemies, which is how al-Qaeda affiliates themselves most often use the term. Yet this particular use of the term 'jihad' in Western literature has been subject to much debate and criticism.⁵ Religious literature points out that the word is used in a variety of meanings, most of which are not related to physical violence. Overall, jihad "... may express a struggle against one's evil inclinations or an exertion for the sake of Islam and the *Umma*, e.g. trying to convert non-believers or working for the moral betterment of Islamic society".⁶ The notion of jihad as a struggle with oneself (*jihād al-nafs*) is often referred to as *al-jihād al-akbar* (the greater jihad) while jihad in the sense of 'physical struggle' is referred to as *al-jihad al-aşğar* (the smaller jihad), indicating that the former should be seen as much more important than the latter. Many would argue that it is the peaceful forms of jihad that are most important today.⁷ The use of 'jihad' by Western scholars to describe the violent activities of al-Qaeda, therefore, is seen as misleading at best. It has also been viewed as an attempt by the West to defame and stereotype Islam by indicating that there is a connection between the Islamic concept of jihad and modern-day 'terrorism'. In an article from 2001, three Pakistani scholars held that jihad had been "distorted with deliberate intent", and that "it is never, as popularly represented, a religiously-motivated aggressive war against 'innocent' non-Muslims, with the aim of spreading Islām by force".⁸

To take an apologetic stance towards the concept of jihad is, however, also to disregard the actual use of the concept throughout Islamic history. In order to understand how militant Islamists use the term jihad today, it is useful to be aware of the origins and the historical uses of the term. In classical Islamic doctrine, it is the 'militant' interpretation of jihad which is dominant: the *Encyclopaedia of Islam* states that "[i]n law, according to general doctrine and in historical tradition, the *djihād* consists of military action with the object of the expansion of Islam and, if need be, of its defence".⁹ The Koran is ambiguous with regards to the concept of jihad and under what circumstances jihad is to be fought. While early verses describe the *jihād* as a defensive struggle, verses later revealed order Muslims to fight the unbelievers unconditionally.¹⁰ This ambiguity can be interpreted as corresponding to the various stages of the Prophet Muḥammad's life, reflecting the need for policy modifications based on specific historical circumstances. In classical Koran interpretation, however, only the later verses were seen as valid, thus legitimizing armed struggle against non-believers even if Muslims are not

⁵ See for example, Richard Bonney, *Jihād: From Qur'ān to bin Lāden* (Hampshire: Palgrave, 2004): 320.

⁶ Rudolph Peters, *Jihad in classical and modern Islam*, 2nd ed. (Princeton: Markus Wiener Publishers, 2005): 1.

⁷ Peters, *Jihad in classical and modern Islam*, 116-117.

⁸ Bonney, *Jihād: From Qur'ān to bin Lāden*, 320.

⁹ B. Lewis, Ch. Pellat and J. Schacht (eds.), *The Encyclopaedia of Islam*, 4th ed. (Leiden: E.J. Brill, 1991): 538.

¹⁰ Peters, *Jihad in classical and modern Islam*, 2.

attacked first.¹¹ As Peters notes, this was not a radical interpretation at the time, but corresponded to the ideas of war that already existed among Arab tribes in the pre-Islamic society, in which war was seen as the ‘normal state’ unless a truce existed.¹² Later, there were attempts to modify this interpretation by describing jihad as defensive only, by prohibiting jihad during the sacred months, etc.¹³ Modernists reject the classical method of Koran interpretation (i.e. that verses revealed later abrogate the earlier, contradictory verses¹⁴), and have instead sought to interpret verses according to their context.¹⁵ One of the first modernist interpretations of the jihadi doctrine was developed in the nineteenth century by the Indian thinker Sayyid Aḥmad Ḥān. He described jihad as obligatory only when Muslims were actively prevented from exercising their faith (as defined by the five pillars of Islam). Therefore, it was not a duty for Indian Muslims to fight against the British colonial administration. The doctrine was formulated after the 1857 revolt in India, at a time of great distrust between Britain and her Indian Muslim subjects. By formulating the doctrine, Khan “... wanted to show that Islam was a respectable religion and that the doctrine of jihad was no obstacle for the loyal service of the British Empire.”¹⁶ In the Middle East, reformers like Muḥammad ‘Abduh (1849-1905) and Muḥammad Rašīd Riḍā (1865-1935) held that jihad is a defensive, military struggle against any type of foreign occupation, thus modifying the classical interpretation of jihad, but not as radically as did Khan.¹⁷

In any case, however, the *Encyclopaedia of Islam* article shows that the ‘militant’ interpretation of jihad (as opposed to a ‘spiritual’ interpretation of jihad) originated with classical Islamic doctrine. Furthermore, the militant interpretation has been used throughout history in Islamic writings and in *fatāwā* to mobilize Muslims to fight against colonial rule and against Israel;¹⁸ it is not an original invention of al-Qaeda or a product of modern militant Islamist rhetoric. The most important argument for me to use the concept of ‘jihad’ and its derivatives (*jihādī*, *mujāhidūn* and its anglicized version, ‘jihadist’) in the strictly militant sense, is that members of al-Qaeda frequently use these terms to describe themselves and their own activities.

¹¹ Lewis, Pellat and Schacht, *The Encyclopaedia of Islam*, 538.

¹² Peters, *Jihad in classical and modern Islam*, 1-3.

¹³ Lewis, Pellat and Schacht, *The Encyclopaedia of Islam*, 538.

¹⁴ The method is known as the theory of *nash* (abrogation). Ibid.

¹⁵ An example of such an interpretation is Maḥmūd Šaltūt, “القرآن والقتال” (The Koran and fighting), published in 1948. Maḥmūd Šaltūt was the sheikh of al-Azhar University in Cairo from 1958-63. The treatise is available in English translation in Peters, *Jihad in classical and modern Islam*, 60-101.

¹⁶ Peters, *Jihad in classical and modern Islam*, 6, 123-124.

¹⁷ Ibid., 6.

¹⁸ Ibid., 103-105.

The phenomenon to be studied, ‘CBRN terrorism’, also needs closer definition. Initially, I wanted to avoid using the term ‘terrorism’ due to the political nature of the term and the negative connotations associated with it. A more neutral alternative would be ‘violence’ or ‘political violence’. However, when referring to violent acts involving the use of chemical, biological, radiological or nuclear materials I found it hard to come up with a short and simple term, and the widely used term ‘CBRN terrorism’ has therefore been employed. ‘CBRN terrorism’ is understood as ‘the tactic of using chemical, biological, radiological or nuclear materials in a violent act to communicate a message to an audience.’¹⁹

I have deliberately used the term ‘CBRN’ (chemical, biological, radiological, nuclear) instead of the more common term ‘WMD’ (weapons of mass destruction) due to the ambiguities connected to the latter. WMD has traditionally been understood as ‘nuclear, chemical and biological weapons’ and often been associated with state-run weapons programmes. Recent definitions of WMD used in the US, however, have started to include radiological agents, and even conventional ways of causing mass destruction.²⁰ The most recent NATO definition of WMD does not specify what kinds of weapons are involved, only that such weapons consist of “a weapon that is capable of a high order of destruction and of being used in such a manner as to destroy people, infrastructure or other resources on a large scale”.²¹ The aim of this thesis, however, is not to analyze the phenomenon of ‘mass-casualty’ or ‘catastrophic’ terrorism *per se*, but rather to consider the whole spectrum of incidents involving the use of chemical, biological, radiological and nuclear means, including the tactical and low-end use of such materials.²²

The acronym CBRN is used in various constructions such as ‘CBRN materials’, ‘CBRN weapons’ and so forth. From a technical perspective, it is important to make a distinction

¹⁹ In addition, definitions of ‘terrorism’ often specify that the perpetrators have to be ‘sub-state’ and that the attack has to be directed against civilians. The question of whether states should be labelled ‘terrorist’ or not is a very political one, and I did not see the need to take a position of this in my thesis. When I discuss trends connected to ‘CBRN terrorism’, however, I have only included incidents associated with non-state actors, because this is how existing literature usually defines the term. I did not find it relevant to specify the type of target in my definition, because I wanted to consider the whole spectrum of incidents associated with al-Qaeda. In the past, al-Qaeda have targeted both civilian and military targets.

²⁰ “WMD411”, *Nuclear Threat Initiative homepage*, http://www.nti.org/f_wmd411/fla1.html (accessed 19 July 2007).

²¹ “NATO glossary of terms and definitions, AAP-6 (2007)”, *NATO Standardization Agency* (2007), <http://www.nato.int/docu/stanag/aap006/aap-6-2007.pdf> (accessed 19 December 2007).

²² Most sources agree that no more than twelve people have ever died in a single CBRN terrorist attack; namely Aum Shinrikyo’s attack on the Tokyo subway with sarin gas on 20 March 1995. See for example, Jonathan B. Tucker (ed.), *Toxic Terror: Assessing terrorist use of chemical and biological weapons* (Cambridge: MIT Press, 2000), 221.

between *materials* or *agents* on the one hand²³, and *devices* or *weapons* on the other. When talking about the CBRN capabilities of sub-state actors, these terms are often used interchangeably, leading to confusion. Put simply, a CBRN device or weapon is CBRN material plus a delivery system or dispersal mechanism for that material. Although CBRN materials may have a terrorizing effect even if they are not weaponized, the presence of a delivery system usually indicates a quite different level of sophistication. At the same time, CBRN materials as well as CBRN delivery systems can be of very different quality and effectiveness. It is also therefore useful to make a distinction between materials and weapons produced by *states* (here referred to as ‘state-level’ or ‘state-produced’), and those produced by *sub-state actors* (here referred to as ‘improvised’ or ‘home-made’). In fact, the “NATO glossary of chemical, biological, radiological and nuclear terms and definitions” indicates that only devices produced by state-sponsored weapon programmes can be referred to as CBRN *weapons*: A ‘CBRN weapon’ is “a fully engineered assembly *designed for employment by the armed forces of a nation state* to cause the release of a chemical or biological agent or radiological material onto a chosen target or to generate a nuclear detonation”[emphasis added].²⁴ A CBRN *device*, on the other hand, is “an improvised assembly or process intended to cause the release of a chemical or biological agent or substance or radiological material into the environment or to result in a nuclear detonation.”²⁵ Non-technical literature is seldom that accurate, as indicated above, and the word ‘weapon’ is applied broadly. A range of other terms is also used such as WMD and CBW (chemical and biological weapons). Al-Qaeda’s own texts and statements are no exception, as will become clear in chapter four. When quoting or discussing existing literature on the topic, I have chosen to reflect the authors’ own terminology, but in my own analysis I have tried to use terms that are as technically accurate as possible. For example, if I talk about a specific chemical device that was described on the Internet, I refer to it as a device and not a weapon. However, I use the term ‘CBRN weapons’ when talking in general terms, referring to the whole class of CBRN weapons, devices and materials. I also use the term ‘non-conventional weapons’ as a synonym to “CBRN weapons”.

²³ The terms ‘materials’ and ‘agents’ are used interchangeably, however; while ‘material’ is a generic term, ‘agent’ usually applies to chemical and biological materials only.

²⁴ “NATO glossary of chemical, biological, radiological and nuclear terms and definitions, AAP-21 (B)”, *NATO Standardization Agency* (July 2006): 1-9.

²⁵ *Ibid.*, I-10.

1.2 Outline of the thesis

The thesis has been divided into seven chapters. Chapter two will review and discuss existing literature and outline a framework for my approach. Chapter three describes the methods used in the research, as well as the selection and reliability of the sources. Chapter four gives some brief background information about the phenomenon of CBRN terrorism as well as some history about the al-Qaeda network to place the research topic within a broader historical and thematic context. Chapter five is the longest chapter, as it consists of both a summary of the source material, as well as containing the first part of my analysis, which aims to describe *the history of al-Qaeda's quest for CBRN weapons, as reflected by statements and activities on various levels within the network*. The chapter is divided into four sub-chapters corresponding to the four 'levels' of al-Qaeda as defined above. Chapter six contains the second part of my analysis which aims to answer the question *why is there a lack of CBRN innovation within the al-Qaeda network*. The analysis is based on discussing the strengths and weaknesses of three hypotheses in relation to the empirical evidence outlined in chapter four. Chapter seven presents the final conclusion and gives suggestions for further research.

2 Framework for my approach

2.1 Foundational problems related to the study of militant Islamism

One of the pitfalls when analyzing militant Islamism is the tendency to view the phenomenon as something inherently ‘Islamic’, ‘religious’ or connected to ‘Arab culture and tradition’, while failing to interpret the violent acts in a broader social and political context. Mahmood Mamdani has noted that the September 11 attacks in particular gave rise to a new round of “culture talk”, understood as “... the predilection to define cultures according to their presumed ‘essential’ characteristics, especially as regards politics”.²⁶ Through this culture talk, al-Qaeda and 9/11 was popularly explained in terms of Wahhabism (an orthodox interpretation of Islam, predominant in Saudi Arabia), without placing the event in a broader historical or political context.

Mamdani criticizes the very premise of culture talk, saying that “[b]y equating political tendencies with entire communities defined in non-historical political terms, such explanations encourage collective punishment and discipline – a practice characteristic of colonial encounters”.²⁷ Post-9/11 culture talk can be regarded in relation to an earlier tendency to view the world as a struggle between primitivism and civilization, which serves to ‘justify’ Western hegemony. This is illustrated for example in Robert Kaplan’s article “The Coming of Anarchy” (1994), which is said to have had a “... deep impact on the US administration.”²⁸

Mamdani argues that militant Islamist movements must be understood as a product of modernity itself, rather than as a pre-modern residue defined by ‘culture’. In order to properly understand the al-Qaeda network, therefore, one has to move away from culture and Islamic doctrine and instead look at the historical and political context. This does not mean that Islam is unimportant, however, but Mamdani’s argument is that one should consider *historical* Islam instead of *doctrinal* Islam. In addition, he argues that one has to “... broaden the focus beyond Islam to include larger historical encounters.”²⁹ Al-Qaeda, therefore, should be seen as a product of specific historical developments during and since the Cold War. In other words, as a “... modern political project, not a traditional cultural left-over”, even if it uses

²⁶ Mahmood Mamdani, “Good Muslim, Bad Muslim: A Political Perspective on Culture and Terrorism”, *American Anthropologist* 104, no. 3 (2002): 766-775.

²⁷ *Ibid.*, 767.

²⁸ Dag Tuastad, “Neo-orientalism and the new barbarism thesis: aspects of symbolic violence in the Middle East conflict(s)”. *Third World Quarterly* 24, no. 4 (2003): 593.

²⁹ Mamdani, “Good Muslim, Bad Muslim”, 768.

traditional phrases and images in its rhetoric.³⁰ In my thesis, therefore, I have placed most emphasis on the modern political and historical context, rather than on Islamic doctrine and culture, in analyzing the al-Qaeda network's interest in non-conventional weapons. This is both to avoid the pitfall of culture talk, but also because I view al-Qaeda as a relatively pragmatic and adaptable network that makes use of religious texts as a justification, rather than a blueprint, for its choice of weapons and tactics. Al-Qaeda has itself demonstrated this pragmatism on several occasions, as will be demonstrated in Chapters four and five.

2.2 Review of existing literature

As mentioned in the introduction, there is a large amount of literature arguing that al-Qaeda is an ideal candidate for using CBRN weapons to achieve its goals, in spite of the lack of empirical evidence to support this. In this subchapter I will review existing literature in order to describe the state of current research into the topic, and to create a basis for my further analysis. Regarding current research, I found two types of studies to be of particular interest to my topic of research: first, literature on the phenomenon of CBRN or WMD terrorism, which often attempts to make a typology of a 'typical CBRN/WMD terrorist'; second, literature discussing the process of innovation in militant groups. I have selected two books and one article to be used as a framework for my analysis: Jonathan B. Tucker's *Toxic Terror* (2000); Adam Dolnik's *Understanding Terrorist Innovation* (2007); and Calvert Jones' "Al-Qaeda's innovative improvisers: Learning in a diffuse transnational network" (2006). In the following I will provide a brief overview of this literature, with an emphasis on describing the three selected works. First, however, I will briefly examine the state of research into the history of al-Qaeda and its quest for non-conventional weapons, based on a selection of well-known secondary literature.

2.2.1 Literature describing al-Qaeda's quest for CBRN weapons

I have not found any study that provides a thorough analysis of al-Qaeda's quest for non-conventional weapons. The topic is mentioned, however, in several of the more general books describing the history of the al-Qaeda network.³¹ Efforts related to non-conventional weapons

³⁰ Mamdani, "Good Muslim, Bad Muslim", 772.

³¹ The summary in this sub-chapter is based on a review of the following books on al-Qaeda: Anonymous, *Through our enemies' eyes: Osama bin Laden, Radical Islam, and the future of America* (Washington D.C.: Brassey's, 2003); Peter Bergen, *Holy War, Inc.: Inside the secret world of Osama bin Laden*, 4th ed. (London: Phoenix, 2003); Rohan Gunaratna, *Inside al Qaeda: Global network of terror* (New York: Berkley, 2003); Bruce Hoffman, *Inside terrorism* (New York: Columbia University, 2006); Peter Bergen, *The Osama bin Laden I know: An oral history of al Qaeda's leader* (New York: Simon & Schuster, 2006).

are usually attributed to the three following periods in al-Qaeda's history: the Sudan period (1991-96), the Afghanistan period (1996-2001) and the period after the fall of the Taliban (November 2001 and beyond).

Most accounts agree that Osama bin Laden's interest in non-conventional weapons started in the early 1990s, when he allegedly tried to purchase uranium in Sudan.³² Most of this information stems from the trial following the bombing of the American embassies in Kenya and Tanzania on 7 August 1998.³³ Apart from the uranium procurement attempts, there is little evidence of al-Qaeda's CBRN efforts in this early period.

In the Afghanistan period, it is widely agreed that al-Qaeda conducted experiments with crude chemicals, that they reviewed literature on biological weapons, and that bin Laden continued to show an interest in radiological and nuclear materials.³⁴ Osama bin Laden's statements to Western journalists in late 1998, when he said that obtaining chemical and nuclear weapons is not a crime but a "religious duty", are frequently quoted in order to illustrate al-Qaeda's determination to obtain WMD,³⁵ but there have been few attempts to analyse these statements in the context of what we now know about al-Qaeda's actual activities in Afghanistan. Overall, the brief historical accounts provide little analysis of the nature of al-Qaeda's efforts in Afghanistan, except for the conclusion that the programme had not been developed very much by the end of 2001, and that the invasion of Afghanistan thwarted its further development. Bruce Hoffman goes into somewhat more detail, as he notes that al-Qaeda's activities in Afghanistan in fact consisted of two parallel efforts: one effort on the training-camp level (experiments with crude chemicals, such as ricin and cyanide) and another effort on the top leadership level (efforts to obtain more viable warfare agents, such as anthrax).³⁶

Some of the more speculative accounts related to the Afghanistan period are claims that al-Qaeda, at this stage, was cooperating with Iraqi scientists and the Sudanese government to set up chemical weapons factories in Sudan, and that the organization was already in possession of various military warfare agents.³⁷ Of the most dubious accounts is a story that appeared in *al-Waṭan al-'Arabī* in November 1998, which was quoted by Michael Scheuer in *Through our*

³² Gunaratna, *Inside al Qaeda*, 49.

³³ "United States of America v. Usama bin Laden, et al., Defendants", *United States District Court, Southern district of New York* (see transcripts from 7, 13 and 20 February, 2001), <http://cryptome.org/usa-v-ubl-dt.htm> (accessed 19 December 2007).

³⁴ Two Pakistani nuclear scientists were arrested and charged with providing support to bin Laden, but were later released. Peter Bergen, *Holy War, Inc.*, 243-244.

³⁵ For example, in Peter Bergen, *Holy War, Inc.*, 243; Anonymous, *Through our enemies' eyes*, 187.

³⁶ Hoffman, *Inside terrorism*, 275.

³⁷ Anonymous, *Through our enemies' eyes*, 191-192.

Enemies' Eyes: the story held that in September 1998, Osama bin Laden bought “more than twenty” nuclear warheads from the Chechen mafia for US\$ 30 million and two tonnes of heroin.³⁸ Such stories are widely disregarded by experts, however, as no hard evidence has ever been presented to verify the claims. Another controversial claim is that the al-Shifa pharmaceutical plant in Sudan, which was bombed by the US in 1998, was producing chemical warfare agents for Osama bin Laden. While Michael Scheuer defends the attack in his account, Peter Bergen refers to it as an “intelligence fiasco” and argues that according to independent evidence, the plant was simply a pharmaceutical factory, and never a front for bin Laden.³⁹

In *The Osama bin Laden I Know*, Peter Bergen deals more extensively with the subject of ‘al-Qaeda’s quest for WMD’ by providing a range of primary sources on the subject, mostly quotes from al-Qaeda members and associates.⁴⁰ The sources range from often quoted accounts such as bin Laden’s interviews with Western media in 1998, to less known sources such as Abū Walīd al-Maṣrī’s account of al-Qaeda’s Shura Council’s discussions of WMD (see Chapter five). This account differs considerably from those discussed above, many of which aimed at simply ‘proving’ al-Qaeda’s interest in non-conventional weapons. Bergen’s account paints a more complex picture of reality, quoting sources that even contradict each other. However, he mostly lets the sources speak for themselves without providing any deeper analysis or explanation.⁴¹

In general, the books I have reviewed concentrate on the history of al-Qaeda up until November 2001. Few of them, therefore, discuss al-Qaeda’s non-conventional weapons ambitions after the loss of Afghanistan. But there are various articles analyzing the period after 2001. They are mostly concerned with two developments: the ‘WMD *fatwā*’ issued by the Saudi radical cleric Nasir bin Hamd al-Fahd in 2003, and attempts by militant Islamist cells to carry out attacks with crude CBRN materials in Europe, the United States and the Middle East.⁴² A few individual articles have also been written about al-Qaeda’s online

³⁸ It was perhaps this story that Ayman al-Zawāhirī mocked when he allegedly told the Pakistani journalist Hamid Mir in late 2001 that “Mr. Hamid Mir it is not difficult [to purchase nuclear weapons]. If you have thirty million dollars, you can have this kind of suitcase bombs from the black market of central Asia.” The existence of so-called “suitcase nukes” has been widely dismissed by nuclear experts. Bergen, *The Osama bin Laden I know*, 348-349; Anonymous, *Through our enemies' eyes*, 191-192.

³⁹ Bergen, *Holy War, Inc.*, 126-129.

⁴⁰ Bergen, *The Osama bin Laden I know*, 337-349.

⁴¹ Ibid.

⁴² For example, Bruce Hoffman, “CBRN terrorism post-9/11”, in Russell D. Howard and James J. Forest, eds., *Weapons of mass destruction and terrorism* (USA: McGraw-Hill, 2008); René Pita, “Assessing al-Qaeda’s chemical threat”, *Athena Paper* 2, no. 7 (17 April 2007). <http://www.athenaintelligence.org/op10.pdf> (accessed

CBRN literature.⁴³ This literature review shows that most of the topics and sources I will discuss in my thesis have to some extent already been mentioned in earlier literature, but have seldom been thoroughly analysed or seen in relation to each other.

2.2.2 Literature on the phenomenon of CBRN terrorism

The next category of literature deals with the phenomenon of ‘CBRN terrorism’. In general, studies within this field usually have one of three approaches, which I have labelled ‘statistics-based’, ‘weapons-based’ and ‘actor-based’.

The statistics-based approach looks at all incidents of CBRN terrorism taking place over a certain time period, and attempts to identify various development trends. The problem with this approach is that the number of CBRN incidents per year is so low that it is hard to draw any conclusions from the data. This will be further highlighted in chapter three, in which I have used some of these databases to provide a general overview of the phenomenon of CBRN terrorism.

The weapons-based approach intends to calculate the effects of the potential use of various CBRN weapons, and is mostly used for contingency planning. It is often conducted independently of various actors’ actual capabilities, based on the idea that one should always be prepared for the worst-case scenario. It is therefore not relevant to my study, except as background reading to get some basic technical knowledge about the various CBRN weapons.

The actor-based approach is perhaps most useful for getting a comprehensive understanding of the phenomenon of CBRN terrorism. In particular, I have reviewed literature that aims to explain why some groups choose to pursue the CBRN option, while others do not. Before outlining some of these studies, however, it is necessary to clarify that these studies do not necessarily look at actors’ willingness to use chemical, biological, radiological or nuclear means the way I have defined them in this thesis. More often, the focus is on the actors’ intention and willingness to cause ‘mass destruction’ *per se*. As noted in the introduction, mass destruction does not necessarily involve the use of CBRN materials, and vice versa. Due to this ambiguity, Jerrold M. Post has suggested making the following distinction: a) mass-casualty attack with conventional weapons; b) tactical use of chemical and biological

18 December 2007); Anne Speckhard, “The new global jihad, 9-11 and the use of weapons of mass destruction: Changes in mindset and *modus operandi*”, *Democracy and Security* 2 (2006):287-298.

⁴³ For example, Sammy Salama and Lydia Hansell, “Does intent equal capability? Al-Qaeda and weapons of mass destruction,” *Nonproliferation Review* 12, no.3 (November 2005): 615-653, and Anne Stenersen, “Chem-bio cyber-class: Assessing jihadist chemical and biological manuals”, *Jane’s Intelligence Review*, 1 September 2007.

weapons (CBW); c) catastrophic, mass-casualty use of CBW.⁴⁴ He argues that one does not necessarily imply the other, and that very few group types would be willing to use ‘catastrophic’ chemical and biological weapons even if they were willing to use ‘tactical CBW’ as well as conventional ways of causing mass casualties.⁴⁵ In order to gain a proper understanding of the phenomenon as well as of the actors using CBRN means, it is important to be aware of this distinction.

What are the characteristics of sub-state actors who seek the use CBRN to achieve their goals?

The use of chemical and biological agents by non-state actors is not a new phenomenon, as it goes back to at least the 1940s.⁴⁶ It was not until the 1990s, however, that the subject of CBRN terrorism started to draw international attention. This was mainly the result of two concurrent developments: Aum Shinrikyo’s sarin gas attack on the Tokyo subway in 1995,⁴⁷ and several incidents of conventional attacks that were more violent and, seemingly, more arbitrary than previous attacks, leading researchers to start talking about a ‘new’ kind of terrorism previously unheard of. In a 1999 study entitled *The Ultimate Terrorists*, Jessica Stern describes the emergence of a ‘new breed of terrorists’ that are more likely to carry out acts of WMD terrorism than traditional terrorist groups. Here, she singles out militant islamists as potential WMD terrorists, but the ‘new breed’ also includes right-wing extremists, apocalyptic cults and groups motivated by religious conviction or revenge.⁴⁸

Statistically, the terrorist attacks of today have become fewer, but more deadly. In that sense, the use of the term ‘new terrorism’ is justified. However, this should not lead us to think that terrorism is necessarily becoming more high-tech – rather it appears that the contrary is true.⁴⁹ Stern opens her book by describing a mass-casualty attack on Manhattan, which, at least in retrospect, could make one form ominous associations with the 11 September attacks. The difference is that while Stern predicted an attack involving an atomic bomb, the 11 September

⁴⁴ Tucker’s study only considers the use of chemical and biological materials and weapons, and uses the term CBW (chemical and biological weapons) to refer to them. Tucker, *Toxic Terror*, 288.

⁴⁵ Ibid.

⁴⁶ In 1946, for example, the group Avenging Israel’s Blood poisoned the bread of German war prisoners. In the 1970s, several attempts to use biological agents by American right-wing groups were recorded. Tucker, *Toxic Terror* and Anthony H. Cordesman, *The challenge of biological terrorism* (Washington: Center for Strategic and International Studies, 2005).

⁴⁷ Aum Shinrikyo was a Japanese cult that carried out a series of attacks with biological and chemical materials between 1990-1995. The deadliest and most well-known attack was an attack with Sarin gas on the Tokyo subway in March 1995 that killed twelve and injured over a thousand. Tucker, *Toxic Terror*, 221.

⁴⁸ Jessica Stern, *The Ultimate Terrorists*, 3rd printing (Cambridge: Harvard University Press, 2000), 8.

⁴⁹ Adam Dolnik, *Understanding terrorist innovation: Technology, tactics and global trends* (New York: Routledge, 2007), 53.

attacks were carried out using commercial aircraft. Again, this illustrates that a willingness to commit mass-casualty terrorism does not necessarily mean that the actor will actually seek to use CBRN materials. The al-Qaeda network has, both before and since 2001, chosen conventional methods in an overwhelming majority of its attacks and plots.

A group's willingness to use WMD is often explained in terms of the incentives and disincentives the group has for carrying out mass-casualty attacks. Groups, such as socio-revolutionary or nationalist-separatist groups, that seek the support of a larger audience are viewed as less likely to carry out acts of WMD terrorism, because this would make them lose popular support. Similarly, groups controlling a clearly defined territory are viewed as less willing to opt for WMD terrorism due to the danger of retaliation attacks. However, a theoretical evaluation of incentives and disincentives does not necessarily explain a group's choice of action on the ground. Fighting for a nationalist-separatist cause did not prevent Chechen militants from taking an entire primary school hostage in September 2004, although the deliberate targeting of children would most certainly create controversy and alienate supporters. The choice of action becomes more 'logical', however, when looking at the brutal history of the Chechen conflict, especially Shamil Basayev's earlier choosing of controversial targets.⁵⁰ In order to get a more accurate picture of 'typical CBRN terrorists', therefore, it is more useful to look at what kinds of groups have actually committed acts of CBRN terrorism in the past.

In *Toxic Terror*, Tucker *et al.* have closely examined twelve historical cases of CBW (chemical and biological weapons) –terrorism, occurring between 1945-1998, in order to pinpoint the characteristics and motivations of such groups.⁵¹ The cases selected were those "... most often cited in the academic terrorism literature, including religious cults, right-wing and left-wing terrorist organizations, and 'amateur terrorists'".⁵² One of the findings of the study was that three of the cases, widely believed to be incidents of CBW terrorism, were poorly documented and most likely apocryphal. They were therefore disregarded in the final

⁵⁰ In 1995, for example, a group of militants led by Basayev took an entire hospital as hostage in the city of Budyonnovsk, Stavropol (north of Chechnya). In this famous case, Basayev succeeded in making Russia comply to separatist demands, greatly contributing to his popularity.

⁵¹ The cases include both suspected, planned and actual use of chemical or biological agents by non-state actors. Radiological and Nuclear terrorism have not been included in this study because of the lack of historical examples of these kind of cases. Tucker, *Toxic Terror*.

⁵² Tucker, *Toxic Terror*, 13. The groups examined were Avenging Israel's Blood (1946), Weather Underground (1970), R.I.S.E. (1972), Alphabet Bomber (1974), Baader-Meinhof Gang (1975), Red Army Faction (1980), Rajneeshees (1984), The Covenant, the Sword, and the Arm of the Lord (1986), Minnesota Patriots Council (1991), WTC Bombers (1993), Aum Shinrikyo (1995), Larry Wayne Harris (1995, 1998).

analysis.⁵³ Tucker's *Toxic Terror* concluded that the groups engaging in CBW terrorism had very diverse motivations for doing so, although a set of common characteristics could be identified. Rather than having a political motivation, the individuals or groups were motivated by "religious fanaticism, supremacist ideology, or apocalyptic prophecy", and the terrorists

... manifest personality traits of paranoia and grandiosity, are innovative in their use of violence, tend to escalate [their violence] over time, typically have no clearly defined base of political support and hence are unconcerned about adverse public opinion, and are often convinced that they are fulfilling a divine command or prophecy that legitimates murder.⁵⁴

One example of a group displaying all of these characteristics is The Covenant, Sword and Arm of the Lord (CSA), founded in Arkansas in the 1970s. It was a right-wing, white supremacist group inspired by the Christian Identity movement, who planned to commit mass murder by poisoning the water supplies of several US cities with potassium cyanide. The objective was to "hasten the return of Messiah by 'carrying out God's judgements' against unrepentant sinners".⁵⁵ It used very selective interpretations of the Bible to justify its ideology, in a way resembling the way militant Islamists (ab)use Koranic verses. Apart from that, however, there were few resemblances with militant Islamist networks like al-Qaeda. The CSA was small and locally based, they did not care about the opinions of anyone outside the organization, they did not act to achieve political goals, but were instead driven by a paranoid concept that Armageddon was imminent, and they did not have any specific strategy to win the 'war': Apparently, this was not necessary because of a conviction that God would take care of everything, and would even ensure that only "those who were meant to die" would be affected by the poisoned water.⁵⁶ The Japanese cult Aum Shinrikyo, also described in detail in Tucker's study, represents the largest scale effort by a terrorist group to produce and disseminate chemical and biological agents. Similar to the CSA, it was also driven by a mixture of apocalyptic ideology, paranoia, defensive aggression and a charismatic leadership.⁵⁷

The bombing of the World Trade Centre (WTC) in 1993 by a group of militant islamists led by Ramzi Yusef (a nephew of Khalid Shaykh Muhammad, who was later to become al-Qaeda's 9/11 mastermind) is included in Tucker's study because of the alleged plan to

⁵³ The three dismissed cases involved the Weather Underground, and the two cases of Baader-Meinhof Gang/Red Army Faction. All were left-wing socio-revolutionary movements. Tucker, *Toxic Terror*, 249-252.

⁵⁴ *Ibid.*, 266-267.

⁵⁵ Jessica Stern, quoted in *Ibid.*, 139.

⁵⁶ *Ibid.*, 151.

⁵⁷ A detailed account of Aum Shinrikyo's CBW-efforts can be found in Tucker, *Toxic Terror*, 207-226.

incorporate cyanide gas in the attack. A container of sodium cyanide was found in a storage shed used by the bombers, but there was no forensic evidence that cyanide had been present in the actual bomb. Significantly, sodium cyanide or chemical weapons were not mentioned by the prosecution in the case at all. There were, however, strong indications that the group had at least considered the use of chemical weapons, either in the WTC bomb or in a later attack.⁵⁸ Interestingly, the study points out Ramzi Yusef's apparent lack of religious motivations for wanting to carry out the attack. While some of his co-defendants expressed religious sentiments, Yusef appeared to be "... a secular terrorist who mobilized others by playing on their religious zeal".⁵⁹ His main motive appears to have been punishment and revenge, "... driven by a confluence of anti-American and anti-Israeli rage and a significant dose of ego rather than religious ideology".⁶⁰ This in contrast to groups like the CSA, who believed their use of chemical and biological weapons would fulfil a divine prophecy.

Other studies based on historical cases of CBRN terrorism tend to support Tucker's findings. In particular, the 'emotional' factor tends to be emphasized as decisive in whether or not a group will opt for CBRN terrorism. Dolnik and Guanaratna writes:

Empirically speaking, organizations that have in the past gone beyond merely expressing interest in chemical and biological agents have been groups for whom these weapons had a strong expressive or emotional value, such as the desire to kill without shedding blood or the interpretation of poisons and plagues as God's tools.⁶¹

As Gary Ackerman has pointed out, however, there is still a great lack of research into the field of CBRN terrorism.⁶² In order to thoroughly understand what drives a particular actor to use CBRN materials in violent attacks, one should not only compare case studies of groups that have attempted to carry out acts of CBRN terrorism, but also consider groups who have *not* carried out such acts so that one can check whether the actor typology is in fact valid. Another question is whether creating such actor typologies is sufficient to understand all aspects of the phenomenon. A broader approach is to look at the process of how groups develop and change their tactics.

⁵⁸ Ibid., 197-199, 205.

⁵⁹ Ibid., 203.

⁶⁰ Ibid., 205-206.

⁶¹ Howard and Forest, *Weapons of Mass Destruction and Terrorism*, 284.

⁶² Gary Ackerman, "WMD terrorism research: Whereto from here?", *International studies review* 7 (2005), 140-143.

2.2.3 Literature on the process of innovation in militant organizations

The ability to learn and transfer knowledge is, of course, vital for any group or organization. Ability to learn increases the chance of success, and enhances the ability to adapt to new environments. If a group does not learn, its success is determined more by chance.⁶³ In a recent study on the topic of innovation in militant groups, Adam Dolnik aims to develop “...a comprehensive theory of terrorist innovation, which will attempt to explain the circumstances and characteristics that determine the level of a group’s involvement in tactical and/or technological innovation”.⁶⁴ The study also aims to develop a practical tool for use in threat assessments.

Dolnik uses a broad definition of ‘innovation’ adjusted to fit the reality of militant groups. Innovation is, put simply, “an act of introduction of a new method or technology or the improvement of an already existing capability.”⁶⁵ He argues that previous research into the field can be divided into two ‘schools’: those who hold that militants will always seek to innovate in order to increase their chance of success (based on business theories), and those who argue that militants are conservative, and that innovation is reactive, not pro-active (based on empirical research). Dolnik notes that both schools have their weaknesses. The ‘business theory approach’ is supported by little empirical evidence, and the ‘empirical approach’ has so far failed to explain why some groups still choose to innovate. His study aims to fill this gap in current research into innovation.

Dolnik’s study is divided into two parts: the first part looks at tactics and technologies developed by non-state actors so far, identifying when innovation occurred and why; in the second part, he conducts a comparative analysis of four case studies aimed at identifying the specific conditions and factors that drove the groups to change their *modus operandi*.⁶⁶

Trends in tactics and technologies

First, Dolnik describes the various tactics and technologies used by sub-state actors throughout history, including primitive attacks (knives, daggers and arson), firearms, stand-off weapons (mortars, rockets, surface-to air-missiles etc.), hostage taking, explosions and the use of CBRN materials. He observes three trends:

⁶³ Brian E. Jackson et al., *Aptitude for destruction: Organizational learning in terrorist groups and its implications for combating terrorism* (Santa Monica: RAND Corporation, 2005): iii, xiv.

⁶⁴ Dolnik, *Understanding terrorist innovation*, 146, 173.

⁶⁵ *Ibid.*, 6.

⁶⁶ *Ibid.*

- First, he notes that most terrorist innovation is *incremental*, meaning that the actors do not innovate *new* technology and tactics in the true sense of the word, but instead improve their ability to use traditional tactics, and make better use of already existing technologies.
- A second, important trend is the “... multiplication and synchronization of traditional tactics, rather than the use of new tactics and weaponry.”⁶⁷ He points out that the 11 September attack was the “ultimate terrorist attack” not because any of its single elements was particularly new or innovative,⁶⁸ but because it combined so many elements in one single attack: primitive weaponry, plane hijacking, synchronization, stand-off attack capability (using planes as missiles), explosions, (using plane fuel), and suicide operatives.
- Third, he observes a trend towards more *technologically crude* modes of attack, indicated, for example, by the global rise of suicide bombings.

Dolnik’s third observation does not imply that militant groups generally shun modern technologies. On the contrary, a wide variety of groups have shown an ability to rapidly adjust to new technologies that can serve their communications and propaganda purposes, such as satellite phones and the Internet.⁶⁹

What are the characteristics of innovative groups?

In the second part of his study, Dolnik looks at four case studies of groups: three that are known to innovate (Aum Shinrikyo, the Popular Front for the Liberation of Palestine, and the Riyadus-Salikhin Suicide Battalion), and one which has never innovated (November 17). He compares the four case studies based on 11 variables, each thought to be relevant to the process of innovation: 1) the role of ideology and strategy; 2) the dynamics of the struggle; 3) countermeasures; 4) targeting logic; 5) attachment to weaponry/innovation; 6) group dynamics; 7) relationship with other organizations; 8) resources; 9) openness to new ideas; 10) durability; and 11) the nature of the technology.

⁶⁷ Dolnik, *Understanding terrorist innovation*, 53.

⁶⁸ Crashing a plane into its target was a well-known tactic used by the Japanese *kamikaze* in the Second World War, and several sub-state actors have allegedly threatened or plotted to use the tactic since as early as the 1970s, including the Black September (1973), an anti-abortion activist (1975), Ramzi Yousef (1995), Turkish Islamists (1998) and various others. Two such attacks were actually attempted (although not with passenger planes, but private airplanes); in Tokyo 1976 and in Washington, D.C. 1994. Both were apparently carried out by disturbed individuals. *Ibid.*, 39-40.

⁶⁹ Jarret M Brachman, “High-tech terror: Al-Qaeda’s use of new technology”, *The Fletcher Forum of World Affairs* 30, no. 2 (summer 2006): 151.

He concludes that very few of the variables can universally explain what distinguishes an innovative group from a conservative one. However, certain combinations of variables increase the likelihood that a group will innovate, and succeed in doing so.⁷⁰ He identifies four “triggers” that in particular might influence a group to innovate:

- The group has an ideology or strategy that requires innovation in order to obtain the goal.
- Competition with other organizations in the same operational theatre
- Presence of government countermeasures directly preventing the group from using methods used in the past.
- Incidental or unintended acquisition of a particular human or material resource (if consistent with strategic and targeting preferences, if the group has the necessary capability to use the resource, and if it is not perceived as too risky, physically or politically).⁷¹

He notes that while the presence of one or more of these factors may make innovation more likely, none of them *require* innovation to take place. This is ultimately determined by the “non-rational component”, as he puts it:

The presence of the non-rational component such as the expressive emphasis to innovation, overly high ambitions in the operational realm, and ideological or expressive attachment to a particular type of weapon or technology serves as the strongest and most universal pre-indicator of the propensity of a terrorist group to innovate.⁷²

The literature reviewed so far has identified certain factors that have characterized groups who have used CBRN weapons, or who have innovated in their tactics in the past. However, the conclusions are mostly derived from case studies of relatively small and homogenous groups, and they are therefore not necessarily transferable to the al-Qaeda network. In order to cover this aspect I have also reviewed literature that sees organizational structure itself as an explanatory factor for whether innovation will take place or not.

Jones’ hypothesis on how organizational structure affects innovation

There are several studies within the field of how organizational structure affects innovation, but few of them are connected to sub-state actors specifically. Several studies have looked at the military innovations of states. Based on a study of the US and the Soviet Union during the

⁷⁰ Dolnik, *Understanding terrorist innovation*, 172.

⁷¹ *Ibid.*, 173-175.

⁷² *Ibid.*, 175.

Cold War, Mathew Evangelista argues that the more centralized an organization is, the less innovative it is. However, he also points out that although centralized organizations innovate less frequently, the ability to implement is higher.⁷³ Murray and Millet have argued that radical innovation is a top-down process, while incremental innovation is a bottom-up process, as it depends on “organizational focus over a sustained period of time rather than one particular individual’s capacity to guide the path of innovation for a short period of time.”⁷⁴ The question is whether these theories are applicable to sub-state actors. In the above-mentioned study on innovation, Dolnik draws from these theories when formulating a hypothesis about how ‘group dynamics’ facilitate innovation. His hypothesis is that “loosely knit or heavily factionalized groups that experience strong internal pressures will demonstrate a greater desire to innovate, but will have more difficulty in completing this process successfully”, while highly structured groups are likely to have a greater capability to innovate successfully, but only under the condition that the decision to innovate is made at the highest level. The reason to look also at the level of internal pressures and disputes, he argues, is that innovation may be seen as a ‘reconciliation tool’.⁷⁵ When testing the hypothesis on four case studies, however, Dolnik did not find any strong correlation between innovation and the level of internal disputes. On the contrary, he finds that hierarchical organizations led by innovation-prone leaders are more likely both to innovate and succeed in it. He also agrees with Murray and Millet’s finding that *radical* innovation is most likely to be a top-down process. This implies that radical innovation is connected to the leader’s personal preferences (which in turn is influenced by other factors, such as an ‘expressive attraction’ to a particular weapon). He notes, however, that while centralized organizations are generally better at succeeding in their innovations, a strong leader may also *decrease* the ability to succeed. In the case of Aum Shinrikyo, the groups’ members were so obsessed with pleasing their leader that it affected their rational scientific judgment, making the innovation attempt less successful.

As previously mentioned, Dolnik does not discuss the process of innovation in *networked* organizations at all. Calvert Jones has, however, made an attempt to discuss the innovative

⁷³ Mathew Evangelista, *Innovation and the Arms Race: How the United States and the Soviet Union Develop New Military Technologies* (London: Cornell University Press, 1988).

⁷⁴ Williamson R. Murray and Allan R. Millet, *Military Innovation in the Interwar Period* (London: Cambridge University Press, 1998), 264.

⁷⁵ Dolnik, *Understanding terrorist innovation*, 17-18.

capabilities of the al-Qaeda network drawing on organizational theory.⁷⁶ He analyses the process of organizational learning within al-Qaeda based on an ‘exploration-exploitation framework,’ i.e. discussing both al-Qaeda’s ability to innovate new ideas, as well as the ability to exploit them effectively. Exploration includes “... experimentation, search, risk-taking and innovation; whereas exploitation involves refinement, efficiency, execution and professionalism.”⁷⁷ His main argument is that al-Qaeda’s transnational network structure has strengthened the network’s ability to explore and innovate, while the ability to exploit resources and expertise has been weakened. Al-Qaeda militants are thus described as “innovative improvisers with high creative potential but low professionalism.”⁷⁸

The al-Qaeda network’s ability to innovate, Jones argues, is strengthened due to two main developments: first, after the loss of their permanent bases in Afghanistan, the network is increasingly seeking to ‘outsource’ their activities to other groups, leading to increased exposure to outside ideas and expertise; second, the lack of hierarchical decision-making promotes a development leading to local cells and individuals acting on their own, without having to ask the central leadership for ‘approval’, and without having gone through a standardized indoctrination and training programme.

Given the increase in ‘home-grown’ and largely amateurish al-Qaeda inspired terrorism the West has seen since 9/11, Jones’ conclusion initially seems to correspond to reality. However, Jones’ hypothesis has not yet been tested against an empirical case study of the al-Qaeda network. This is where I believe my thesis will fill a gap in current research, although my study is focused on CBRN innovation, and not on innovation in general.

2.3 How I will use this framework as support for my analysis

The aim of this thesis is not to develop new theories, but rather to perform an empirical case study of the al-Qaeda network, and to discuss the findings in relation to previous studies and existing literature on CBRN terrorism and innovation. In particular, I will use the case study to test the validity of the argument presented in Jones’ article about “al-Qaeda’s innovative improvisers”. On a more general level, the aim of the thesis is to contribute to a better understanding of how innovation takes place in networked organizations.

⁷⁶ Calvert Jones, “Al-Qaeda’s innovative improvisers: Learning in a diffuse transnational network”, *Cambridge Review of International Affairs* 19, no.4 (December 2006): 555-569.

⁷⁷ *Ibid.*, 556.

⁷⁸ *Ibid.*, 555.

The main research question is: *what is the nature of al-Qaeda's interest in CBRN weapons, as reflected by statements and activities on various levels within the network between 1996-2006?* I have divided the analysis into two parts: the aim of the first part is to review and analyse the source material in order to describe the history of al-Qaeda's quest for non-conventional weapons, and I shall focus on the period of 1996 onwards. 1996 was chosen because it marks the beginning of al-Qaeda's 'Afghanistan period', and also because there are few indications of any serious efforts to obtain non-conventional weapons before that time (with the possible exception of bin Laden's uranium procurement efforts in Sudan). The aim of the second part is to discuss *why* that particular historical development occurred. Initially, I wanted to answer "why has not al-Qaeda used CBRN weapons to achieve their goals?"⁷⁹ This question, however, would require a discussion of both internal as well as external explanatory factors (for example, the arrest and capture of al-Qaeda leaders, the loss of Afghanistan as a secure haven, the success of non-proliferation regimes, the technical hurdles associated with CBRN weapons, etc.). In order to narrow down my analysis, I have chosen to focus on *why there is a lack of CBRN innovation within the al-Qaeda network*. The question is relevant for several reasons: since the late 1990s, and especially since 2001, it has been widely expected that al-Qaeda would attempt to obtain CBRN weapons and use them in an attack on the United States. Moreover, al-Qaeda has previously demonstrated highly innovative capabilities (the 9/11 attacks); and, according to Jones' hypothesis, al-Qaeda's networked structure is supposed to further promote innovation.

Part 1: Describing the history of al-Qaeda's CBRN efforts

Describing the history of al-Qaeda's CBRN efforts is no straightforward task, since neither 'al-Qaeda' nor 'CBRN weapons' are single variables. As mentioned in the introduction, I have defined the al-Qaeda network as consisting of four levels: central, affiliates, locals and sympathizers. For the sake of the analysis, CBRN weapons should also be divided into at least two levels: 'low-end/tactical' vs. 'high-end/catastrophic'. As Dolnik notes, due to the enormous fear associated with CBRN terrorism, various conventional groups might seek a low-end CBRN capability and rely on crude agents or dual-use items. However, this "...

⁷⁹ The question has been discussed in various articles, for example, John Parachini, "Putting WMD Terrorism into perspective", *The Washington Quarterly* (Autumn 2003):37-50; Chris Quillen, "Three explanations for al-Qaeda's lack of a CBRN attack", *Terrorism Monitor* 5, Issue 3 (15 February 2007), http://www.jamestown.org/terrorism/news/uploads/TM_005_003.pdf (accessed 14 November 2007); Von Hans Rühle and Michael Rühle: "Islamisten und Massenvernichtungswaffen: Globalisierung des Selbstmordattentates", *Neue Züricher Zeitung*, 11 October 2007, no. 236, p. 5.

should be understood as psychological operations that are aimed at creating disproportionate fear, but do not necessarily represent a terrifying shift to catastrophic terrorism”.⁸⁰ In other words, seeking a low-end capability does not necessarily make someone a ‘superterrorist’.⁸¹ When analyzing the source material, therefore, I have to determine what kind of weapons al-Qaeda seems to be interested in. Do al-Qaeda’s CBRN efforts, in fact, reflect a true desire to become a ‘superterrorist’, or do they simply reflect efforts to obtain a tactical CBRN capability? And equally interesting, have these efforts changed over time? To guide my analysis, I have formulated three sub-questions to be answered in this part of the thesis:

- a) What kinds of CBRN weapons have al-Qaeda been interested in?
- b) What is the relative importance of CBRN weapons in relation to other weapons and tactics?
- c) How has the interest in CBRN weapons evolved?

Part 2: Explaining the lack of innovation

Tucker and Dolnik’s case studies indicate that there is a number of factors that may influence the process of innovation in the field of CBRN weapons, and these need to be taken into consideration before drawing any conclusions as to why al-Qaeda has not pursued CBRN weapons more actively. One drawback of applying Tucker and Dolnik’s studies to my analysis is that factors explaining why innovation occurred in the past do not necessarily apply to the present. In addition, the generalizations are based on case studies of relatively homogenous groups, thus not reflecting the kind of innovation dynamics that apply to the networked structure that al-Qaeda represents. Though there is a lot of theoretical literature about innovation in networks, there are few case studies. In order to answer the second sub-question I have used arguments and findings from the above-mentioned literature to formulate three hypotheses regarding al-Qaeda’s lack of CBRN ambitions:

- a) CBRN weapons are not necessary to obtain the goal
- b) There is not sufficient ‘emotional attraction’ in the use of CBRN weapons
- c) Al-Qaeda’s organizational structure prevents innovation

In other words, the hypotheses seek to explain the lack of CBRN interest both in terms of rational choices, ‘irrational’ factors as well as organizational structure. In part two of my

⁸⁰ Dolnik, *Understanding terrorist innovation*, 179.

⁸¹ Dolnik uses the word ‘superterrorists’ to describe groups that are likely to seek high-end CBRN capabilities. He summarizes by saying that such groups are “...likely to be apocalyptic cults or increasingly radicalized splinter groups led by uncontested innovation-prone leaders who are fascinated with diseases, poisons or the principle of unconditional reciprocity”. Ibid.

analysis, I will discuss the validity of these three hypotheses based on the source material and findings from part 1 of the analysis.

3 Methods and sources

The method used in this thesis is mainly *qualitative analysis* of text documents, most of which have been accessed via the Internet. I have not conducted any interviews or surveys. Interviewing members of the al-Qaeda network about their CBRN interest would obviously be a very relevant method to answer my research question; but this would be impossible due to the secretive nature of the network and the lack of access to sources. Instead, I have based the analysis on oral and written statements by al-Qaeda members, other al-Qaeda publications, as well as a variety of secondary sources such as court documents and media reports. I have consciously sought to use a variety of different sources in order to confirm the accuracy of the information. In some cases, however, I have had to rely on a few or only one source, but I have nonetheless included them, although with certain reservations.

Statements by al-Qaeda members include both statements aimed at a Western audience (such as interviews with Western periodicals) as well as statements aimed at potential and current supporters. I have also included, to the extent I have been able to access them, documents and statements meant for internal use within al-Qaeda.

In addition to looking at official and unofficial al-Qaeda documents, I have also chosen to look at al-Qaeda's *activities* in the CBRN field. It is necessary to compare statements and actions in order to test whether al-Qaeda-statements reflect actual attitudes, or whether they are mere propaganda. Similarly, analyzing al-Qaeda's statements is important in order to correctly interpret al-Qaeda's actions. For example, it is easy to misinterpret or overestimate the importance of a particular action unless we have a thorough understanding of al-Qaeda's expressed intentions. My analysis of al-Qaeda's activities is mainly based on judicial documents and media reports.

I have aspired to include in my material *all* of al-Qaeda's statements and actions connected to CBRN weapons, but I had to make some selections throughout the work on this thesis. With regards to al-Qaeda central, the size of the source material was manageable. However, with regards to al-Qaeda affiliates I had to pick only one region (Iraq) and focus on CBRN statements and actions in that region only. When analyzing al-Qaeda locals, I have included only cases that were relatively well documented, i.e. cases in which cell members were arrested and judicial documents were publicly available. On the sympathizer level, I have

focused on analyzing texts from a few well-known discussion forums and web pages. Another limitation in my study has been to focus on the period from 1996-2006 only. I found it relevant to focus on this period because there are few indications that al-Qaeda had any CBRN-related activities before that time, although there are claims that Osama bin Laden has had certain nuclear and chemical aspirations since the early nineties. Also, as previously mentioned, 1996 can be said to represent the beginning of a new stage in al-Qaeda's development, signified by Osama bin Laden's return to Afghanistan and the issuance of the first communiqué in which he declares the United States an enemy. The main part of the Internet sources were collected during 2005-2006. I have allowed myself to also include material from 2007, however, when it can be used to shed light on the analysis.

I have mostly used a qualitative approach, because I am seeking to interpret the meaning of certain statements and actions relative to a certain context. However, I have also used simple statistical methods in a few cases when counting incidents is meaningful, for example in analyzing the content of large message boards to determine the most popular topics discussed.

A large part of my primary sources have been downloaded from jihadi webpages. One of the main challenges to this research strategy is the question of the validity and reliability of the sources. This is a somewhat problematic question when dealing with the Internet in general, and jihadi web pages in particular, where the users are completely anonymous. While most jihadi discussion forums require users to register with a username, password and email address, there are usually no other screening processes involved.⁸² In theory, therefore, anyone could write a jihadi document and post it on a forum. How do we know that this material represents the writings of jihadists? Most importantly, jihadist material is subject to internal control. An indicator of a text's authenticity is that the material is accepted and recommended by other jihadists, as well as re-produced and spread to other jihadi webpages. There are a few examples that writings perceived as 'fake' have been rejected and even deleted by the forum administrators, although this mostly concerns ideological and propaganda material, not training material.⁸³ Another indicator of authenticity is that the text

⁸² Different forums have, at different times, operated with various forms of 'screening,' such as requiring personal references from other members, or a certain amount of message postings. Members within the forum may also have different statuses and rights. Some sub-forums are open for everyone to view but posting in them is restricted to select members (such as the forums for official communiqués from Jihadi groups), other sub-forums are hidden to the general public, and only visible to select members. This report is based on information found in forums that are generally accessible.

⁸³ Examples of material perceived as 'fake' are, in particular, material that may instigate internal strife and does not serve the cause of jihad (e.g. a video of a jihadi group torturing a member of another jihadi group in Iraq). It seems technical and training material is subject to less control, probably due to the limited technical knowledge

carries the logo of an ‘official’ jihadist group or media outlet, or is posted by an active and well-known ‘internet jihadist’ as opposed to a new and totally unknown user. Finally, probably the best indicator of authenticity is that the material has actually been used in real life, for example that it is identical to or resembles documents found in jihadi training camps or in the apartments of arrested suspects. The manuals and documents I have downloaded from jihadi web pages generally fulfil one or more of these criteria. While this is not full ‘proof’ of their authenticity, a narrower selection criterion would result in too few sources.

of the participants. Although there is a lot of inaccurate technical information, no example of a deliberately falsified training manual has in fact been seen, although it cannot be ruled out.

4 Background on CBRN terrorism and al-Qaeda

4.1 The phenomenon of 'CBRN terrorism'

Several books have already been written examining historical cases of CBRN terrorism and providing chronologies of all events taking place throughout history. In this subchapter, I will not repeat this information, but instead make some general observations to place to some extent the phenomenon in perspective. First, the use of CBRN materials in acts of political violence is not a new phenomenon; secondly, that when compared to other types of political violence, CBRN terrorism is extremely rare, and has caused very few fatalities.

4.1.1 The history of CBRN terrorism

According to some historians, the tactic of using chemical or biological materials in warfare is several thousand years old. Already by the sixth century B.C., the Assyrians were thought to be poisoning their enemies' wells with rye ergot. An early example of "biological warfare" is when the Tartar army threw plague-infested bodies over the walls of the city of Kaffa during a siege in 1346.⁸⁴ This subchapter, however, will not consider the use of CBRN materials by regular armies, or the history of state-run WMD programmes. In order to provide a relevant background to the analysis of al-Qaeda's CBRN interest, the chapter is limited to discussing sub-state actors' use of CBRN material in acts of political violence. One of the earliest well-documented examples of the use of a chemical poison by a non-state actor dates back to 1946, when the group Avenging Israel's Blood poisoned the bread of Nazi prisoners in an American camp outside Nuremberg, Germany. The number of fatalities is unknown, but reportedly 2,283 prisoners fell ill and 207 were hospitalized. An early attempt to use a biological agent occurred in 1972, when an American environmentalist group planned to poison water supplies with typhoid bacteria. The group was arrested before it could put the plan into practice, but had several bacterial cultures in its possession.⁸⁵ The use of radiological materials for terrorist purposes is a more recent phenomenon. Though no attack with a radiological dispersal device (RDD) has actually taken place, sub-state actors have occasionally been in possession of radiological materials that could be used in RDDs or so-called 'dirty bombs'. An infamous incident occurred in 1995, when Chechen separatists placed a package with a small amount of the radioactive isotope Caesium-137 in a park in Moscow, followed by a tip-off to the Russian press. There was no attempt to disperse the material, however.

⁸⁴ See for example the chronology in Cordesman, *The challenge of biological terrorism*, 12-17.

⁸⁵ For a detailed description of these cases, see Tucker, *Toxic Terror*.

As Dolnik points out, by far the most common type of CBRN terrorism is the use of *primitive and easily obtainable* chemical and biological materials, often dual-use items (potassium cyanide, chlorine, salmonella bacteria, insecticides, etc.). The use of actual *warfare agents* is, by comparison, extremely rare. Arguably, there are only two such cases in history, namely Aum Shinrikyo's sarin gas attack on the Tokyo subway in 1995, and the so-called 'anthrax letters' that caused widespread panic on the East coast of the US in late 2001.⁸⁶ Although the Aum Shinrikyo group managed to manufacture sarin gas themselves, warfare agents normally have to be purchased on the black market, obtained from 'insiders' or even stolen.

4.1.2 How significant is the phenomenon?

A search in some of the biggest 'terrorism databases' online reveals that CBRN terrorism is, compared to other forms of political violence, neither frequent nor very deadly. The MIPT⁸⁷ Terrorism Knowledge Base has recorded more than 23,000 incidents of terrorism in the period 1998-2006, of which only 40 incidents (or 0.2 per cent) were connected to a chemical or biological agent. The database has not recorded any incidents of radiological or nuclear terrorism.⁸⁸ According to the database, 38,000 people were killed as a result of terrorism in this period, out of which 10 were killed as a result of terrorism caused by a chemical or biological agent.⁸⁹ Another and more recently created database, the Global Terrorism Database, hosted by the National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland, contains nearly 80,000 terrorist incidents since 1970 and is currently updated through 2004.⁹⁰ This database had recorded only 13 "CBRN attacks" between 1998-2004. Incidents involving biological and chemical weapons reportedly accounted for merely 0.1 and 0.2 per cent respectively of the total number of incidents in this period.⁹¹

⁸⁶ Dolnik, *Understanding terrorist innovation*, 46.

⁸⁷ Memorial Institute for the Prevention of Terrorism, based in Oklahoma City, United States.

⁸⁸ See *MIPT Terrorism Knowledge Base*, www.tkb.org (accessed 17 January 2007).

⁸⁹ In addition to 4 fatalities [5 according to other sources] caused by the 'Anthrax letters' in the US, the database has recorded 2 cases of assassination with a toxin in Kashmir, and 4 fatalities caused by a mass poisoning incident in Japan, possibly with cyanide.

⁹⁰ The database claims to include "systematic data on international as well as domestic terrorist incidents that have occurred during this time period". See "Global Terrorism Database", *START: National Consortium for the Study of Terrorism and Responses to Terrorism website*, <http://www.start.umd.edu/> (accessed 19 December 2007).

⁹¹ See "Distribution by Weapon Types, 1998-2004", and "Distribution by Attack Type, 1998-2004" *START: National Consortium for the Study of Terrorism and Responses to Terrorism website*, http://209.232.239.37/gtd2/charts/weapon_type.gif and http://209.232.239.37/gtd2/charts/attack_type_pie.gif (accessed 19 December 2007).

The Monterey WMD Database is maintained by the Center for Nonproliferation Studies at the Monterey Institute of International Studies, California, USA. The database presents itself as “the largest open source catalog of worldwide incidents involving the acquisition, possession, threat and use of weapons of mass destruction (WMD) by sub-state actors”.⁹² The database does not record incidents of conventional terrorism. As of 1 January 2007, the database contained 1,438 CBRN incidents dating from the year 1900 until the present. Registration in the database started in 1997, and the majority of the incidents have taken place since 1998 onwards.⁹³ It needs to be noted, however, that 63 per cent of the events registered in the database belong to the categories of hoaxes/pranks, threats, plots and false cases, in which no actual CBRN agent was present. The database also includes CBRN events not traditionally related to terrorism, such as extortion threats, smuggling attempts and assassinations. However, it is possible to exclude these types of incidents when searching in the database. If we only include cases coded as “Use of Agent”, the database lists 168 cases, which have resulted in 756 fatalities in the period 1998-2006.⁹⁴

Database	Period	Incidents, total	Incidents, CBRN	Fatalities, total	Fatalities, CBRN
MIPT	1998-2006	23,477	40	38,017	10
START	1998-2004	80,000	13	40,094	-
Monterey	1998-2006	-	168	-	756

Figure 1: WMD terrorism in perspective

The figures from the Monterey WMD database might lead to the overly hasty conclusion that CBRN terrorism is far more deadly than conventional terrorism. A closer look at the data material reveals, however, that this is not necessarily the case. The number is highly influenced by three incidents which took place in Kenya (1998), Uganda (2000) and Nigeria (2000), and which claimed a total of 646 fatalities. The exact number of victims in these incidents is not clear, however, and it is uncertain whether the cause of death was a CBRN agent or conventional weapons.⁹⁵ Hence, it is too early to conclude that CBRN terrorism has in fact become more deadly than conventional terrorism. In any case, the statistics leave no doubt that people who intend to cause terror still prefer conventional methods, and that CBRN

⁹² “About the database”, *Monterey WMD Terrorism Database*, <http://cns.miis.edu/db/wmdt/index.htm> (accessed 19 December 2007).

⁹³ “Methodology”, *Monterey WMD Terrorism Database*, <http://cns.miis.edu/db/wmdt/method.htm> (accessed 19 December 2007).

⁹⁴ *Monterey WMD Terrorism Database*, search conducted on 29 December 2006, <http://cns.miis.edu/db/wmdt/asearch.htm>.

⁹⁵ *Monterey WMD Terrorism Database*, case IDs 96, 820 and 906, <http://cns.miis.edu/db/wmdt/> (accessed 19 December 2007).

terrorism as of today remains a marginal phenomenon (if not in the threat perceptions in the West, so at least in terms of how terrorism is actually practiced today).

4.2 *Al-Qaeda and the global jihadi current*

The purpose of this thesis is not to explain the rise of al-Qaeda or the global jihadi current. A brief overview is necessary, however, in order to provide a basis for further analysis. In this overview I have emphasized describing the nature of the al-Qaeda network, its ideology and strategy.

4.2.1 What is al-Qaeda?

The early history of al-Qaeda is closely connected to the history of the Saudi businessman Osama bin Laden. Born in 1957 to a wealthy Saudi family, he travelled to Afghanistan in the 1980s as one of many thousand Arab volunteers in the war against the Soviet Union. Although he reportedly participated in battles, his most important role was as a facilitator, sponsor and constructor. Around himself he gathered a small circle of associates and followers, but he was not the most prominent jihadi leader at the time. The Soviet withdrawal in 1989 gave an enormous moral boost to the jihadi movement, but this also implied that the many thousands of the supposedly battle-hardened Arabs in Afghanistan might need to find a new cause to fight for. Peter Bergen has argued that bin Laden, even at this point, envisioned setting up a contingent of foreign fighters to assist Muslim struggles around the world and to ‘keep the jihad alive’. According to recovered documents, in 1998 a formation meeting was held of a group named *al-qā’ida al-‘askariyya* (the military base), which, some have argued, was the origin of the name al-Qaeda.⁹⁶ At this stage, however bin Laden had not yet formulated his ideology of a global jihad.

In 1989 he briefly returned to Saudi Arabia, but due to his involvement with militant Islamism, his relationship to the Saudi authorities became strained, and he was forced to leave the country. After a short period in Afghanistan he went to Sudan, where he stayed from 1992-1996 with some of his associates from the Afghanistan period. In 1996 he returned to Afghanistan, where he could operate relatively freely after the Taliban movement taking power in September that year, and he became involved in financing and organizing camps to train young Muslims for jihad. At this point, bin Laden also shifted his focus from the ‘near’ to the ‘far’ enemy, namely the United States, and started to formulate the idea of a global

⁹⁶ Bergen, *The Osama bin Laden I Know*. For more on the origins of the name al-Qaeda, see also Burke, *Al-Qaeda*, 1-9.

jihadi struggle. In August 1996, he declared war on the Americans on the Arabian Peninsula (referring to the US armed forces who were stationed in Saudi Arabia after an agreement with the Saudi government), followed in February 1998 by the well-known “Declaration of jihad against the Jews and Crusaders”, in which he stated that participating in the jihad is an individual duty (*farḍ ‘ayn*) for all Muslims.⁹⁷ This represents a shift from traditional jihad doctrines, which describe jihad as a collective duty (*farḍ kifāya*), meaning that “[its] fulfilment ... by a sufficient number of individuals excuses the other individuals from fulfilling it.”⁹⁸ In the case of a defensive jihad, however, jihad will become an individual duty for fighting-fit Muslims living in the territory under attack.⁹⁹ Bin Laden’s argument for making jihad an individual duty for *all* Muslims is that he defines the whole Muslim world as currently under attack by the West. The first major operation connected to al-Qaeda was the bombings of the US embassies in Kenya and Tanzania on 7 August 1998.

In the period from 1996-2001, however, bin Laden’s group may have acted more like a sponsor of other groups and individuals, rather than being a tightly knit organization which planned and carried out its own operations. As Burke puts it, al-Qaeda acted as “... a venture-capitalist firm, sponsoring projects submitted by a variety of groups or individuals in the hope that they would be profitable.”¹⁰⁰ Reading the history of al-Qaeda, it becomes clear that operational plans were often formulated on lower levels in the network, and then presented to senior al-Qaeda leaders for approval and funding. The 11 September attacks, for example, were not bin Laden’s idea, but were masterminded by a Kuwaiti engineer, Khalid Sheikh Muhammad (Ḥālīd Šayḥ Muḥammad), in the mid-1990s.¹⁰¹ Muhammad claims to have presented his plans to bin Laden as early as 1996, when he was not even a formal member of al-Qaeda (in the sense that he had not sworn a *bayān*, or oath of allegiance, to bin Laden). Rather, he acted as an independent ‘entrepreneur’ who, like many other militant Islamists at the time, turned to al-Qaeda for material support. Bin Laden initially rejected the plan, but decided to support it in March or April 1999, after Muhammad had sworn the oath of allegiance to him.¹⁰²

⁹⁷ “نص بيان الجبهة الإسلامية العالمية لجهاد اليهود والصليبيين” (Text of the statement by the World Islamic Front for jihad against the Jews and Crusaders), *al-Quds al-‘Arabi*, 23 February 1998.

⁹⁸ Lewis, Pellat and Schacht, *The Encyclopaedia of Islam*, 539, 790.

⁹⁹ *Ibid.*, 539.

¹⁰⁰ Burke, *Al-Qaeda*, 13.

¹⁰¹ *The 9/11 Commission Report* (New York: W. W. Norton & Co., 2004), 153-154.

¹⁰² *Ibid.*, 154.

This special group dynamic, which involves operatives on lower levels of the network initiating plans and then seeking approval from the leadership, makes al-Qaeda very different from traditional top-down organizations. At the same time, neither can the decision-making process in al-Qaeda be described as simply bottom-up as the al-Qaeda leadership may modify the plans proposed, or even come up with new ones.¹⁰³ In chapter five, I will discuss how this dynamic has influenced al-Qaeda's CBRN activities.

Jason Burke argues that al-Qaeda has three dimensions: the 'al-Qaeda hardcore' (Osama bin Laden and his close circle of associates); the 'network of networks' (militant Islamist groups and individuals who have some connection to the 'hardcore'); and 'the ideology', which in his view has become most important since 2001.¹⁰⁴ Bruce Hoffman, on the other hand, does not label ideology as a separate dimension of al-Qaeda, but describes al-Qaeda as a physical network with four layers: central, affiliates, locals and network, which are also the basis for my analysis of the network.¹⁰⁵

4.2.2 Al-Qaeda's goal and strategy

Al-Qaeda's goal, in its own words, is to defend Muslim territory from foreign invaders and the United States is viewed as the principal enemy because it is the source of both direct and indirect suppression of Muslims. The US directly suppresses Muslims due to its military presence in Afghanistan, Iraq and other Muslim countries. The US also suppresses Muslims indirectly due to its political and economic support to Israel and secular governments in the Muslim world. Since 2001, several al-Qaeda members have also expressed a desire not only to defend the Islamic nation, but also to punish the United States for atrocities committed against Muslims. To obtain its goal, al-Qaeda has as its main strategy to carry out violent attacks against the United States and its allies, preferably on the enemy's own territory. The purpose of the attacks is to weaken the United States, but also to awaken the Islamic nation (*al-umma*) to fight against Western suppression. Al-Qaeda has not shown a willingness to compromise or negotiate, because brute force is viewed as the only language the United States

¹⁰³ The Jose Padilla case may serve as an illustration: In 2002, Padilla initially proposed to attack the United States with a 'dirty bomb', but Khalid Sheikh Muhammad (al-Qaeda's head of operations at the time) deemed the plan too complicated for Padilla's capabilities, so he instructed him to blow up apartment buildings with natural gas instead. See Chapter five for a detailed description of the case.

¹⁰⁴ Burke, *Al-Qaeda*, 13.

¹⁰⁵ Hoffman, *Inside terrorism*, 285-288.

will understand.¹⁰⁶ As bin Laden expressed it in 2004, "... [t]here can be no dialogue with the occupiers except with weapons."¹⁰⁷

4.2.3 Are all tactics acceptable?

Al-Qaeda are often described as having no moral qualms when it comes to using violence against civilians. Jerrold M. Post writes in *The Psychology of WMD Terrorism* that "... there's no ambivalence concerning use of violence that is religiously commanded".¹⁰⁸ This is not very descriptive of al-Qaeda's use of violence, however. The network has demonstrated that its approach to the use of violence is not straightforward; it is constantly debated and revised in response to external developments and changes. This includes lengthy discussions about lawful targets and tactics.

While many of these discussions are based on interpretations of religious texts (the Koran and Hadith), al-Qaeda leaders have also shown a more pragmatic approach. Tactics that do not benefit the cause, for example, should be avoided. This was illustrated in a letter sent by Ayman al-Zawāhirī to al-Qaeda's local leader in Iraq, Abū Muṣ'ab al-Zarqāwī, in 2005, in which al-Zawahiri condemns al-Zarqāwī's campaign of beheading and the targeting of Iraqi Shi'ite Muslims. Explaining the importance of the Iraqi people's support to win the war, he argues that "... the jihadist movement must avoid any action that the masses do not understand or approve, if there is no contravention of Sharia in such avoidance, and as long as there are other options to resort to..."¹⁰⁹ He says al-Zarqāwī is justified in arguing that the enemy 'deserves' the use of such tactics based on the principle of equal retaliation, however,

... this does not change the reality at all, which is that the general opinion of our supporter does not comprehend that, and that this general opinion falls under a campaign by the malicious, perfidious, and fallacious campaign by the deceptive and fabricated media.¹¹⁰

Rather than using religious arguments to criticize al-Zarqāwī, al-Zawahiri points to the actual situation on the ground and carefully explains why al-Zarqāwī's brutal methods combined with the enemy's media dominance will give him a strategic disadvantage in the war. Other

¹⁰⁶ See for example, Sulaymān Abū al-Ġayṭ, "تحت ظلال الرماح الحلقة الثالثة"، (In the shadow of the lances, part three: Why should we fight America?), *Markaz al-dirāsāt wal-buḥūṭ al-islāmiyya* (2002). Accessed via archive: <http://web.archive.org/web/20030923214012/www.alneda.com/-subject=2&rec=716.htm> (accessed 12 November 2007).

¹⁰⁷ Osama bin Laden, quoted in Bruce Lawrence, *Messages to the World: The statements of Osama bin Laden* (New York: Verso, 2005): 217.

¹⁰⁸ Jerrold M. Post, "The psychology of WMD terrorism", *International Studies Review* 7, no. 1 (2005): 149.

¹⁰⁹ Ayman al-Zawāhirī, "Letter to Abū Muṣ'ab al-Zarqāwī" 9 July 2005, *Harmony Database*, <http://ctc.usma.edu/harmony/pdf/CTC-Zawahiri-Letter-Arabic-10-05.pdf> (accessed 18 November 2007).

¹¹⁰ Ibid.

ideologues have also tended to question the efficiency, rather than the legitimacy, of such methods.¹¹¹ When trying to explain al-Qaeda's choice of tactics, therefore, it is important to remember that this is not necessarily limited by (or inspired by) religious texts, but is simply a result of rational judgments and the current needs of the battlefield. Zawahiri's letter also refutes another usual claim, namely that al-Qaeda lacks a constituency, and therefore has no constraints with regards to its use of violence. As stated above, al-Qaeda's goal is not only to repel or punish the United States, but to rally the Islamic nations (?) to the common cause. Al-Qaeda leaders appear to be well aware that the excessive use of violence (killing women and children, for example) will be used by the enemy in propaganda to undermine al-Qaeda's cause.¹¹² Therefore, al-Qaeda leaders are making constant efforts to justify their actions in order not to isolate themselves from potential supporters within the Islamic nation. How the violence is justified, and how effective it is in convincing the *Umma*, is another discussion.

¹¹¹ Thomas Hegghammer, "Global Jihadism after the Iraq War", *Middle East Journal* 60, no. 1 (Winter 2006): 17.

¹¹² For example, in December 2001 the Wall Street Journal reported that they had found a computer in Kabul that had belonged to the al-Qaeda leadership. The computer contained hundreds of files dating back to 1997, including personal correspondence with militants around the world. Among them was a memo that, according to the Wall Street Journal article, "... referred to a 'legal study' on the 'killing of civilians'. The writer, acknowledging this is a 'sensitive issue', says he has found ways to keep 'the enemy' from using the 'killing of civilians, specifically women and children', to undermine the militants' cause." Alan Cullison and Andrew Higgins, "Computer in Kabul holds chilling memos: PC apparently used by al-Qaeda leaders reveals details of four years of terrorism", *The Wall Street Journal*, 31 December 2001.

5 The history of al-Qaeda's quest for CBRN weapons

“Despite their extreme danger, we only became aware of them [chemical and biological weapons] when the enemy drew our attention to them by repeatedly expressing concerns that they can be produced simply...”¹¹³

-Ayman al-Zawāhirī (1999)

As stated previously, the aim of this chapter is to examine al-Qaeda's statements and activities on various levels within the network in order to describe the history of al-Qaeda's efforts in the field of CBRN weapons. Grouping the empirical data into four levels is not meant to illustrate that there are four different and independent 'al-Qaedas' which conduct CBRN activities totally independently of each other. As will be illustrated later, the four levels are dynamic and in constant interaction. Ideological and strategic guidelines occur at the 'al-Qaeda central' level, and may or may not influence the other parts of the network. 'Al-Qaeda central' may be involved in planning an operation, but this could also be initiated entirely on the 'locals' level. Individuals on the 'sympathizer' level may never actually have met fellow al-Qaeda sympathizers, except in virtual settings, or they might play vital roles as media and propaganda agencies for the 'affiliates' level. In many cases, it might be hard to attribute a statement or an activity to a specific level. This is especially true of the online training manuals, which have been placed on the 'sympathizer' level, although they can also be regarded as reflecting the training courses that were given in jihadi training camps in the nineties, or local poison plots carried out by independent al-Qaeda cells that accessed the manuals via contacts or via the Internet.

5.1 *Al-Qaeda central*

5.1.1 Written and oral statements

An insider account of discussions held in al-Qaeda's Shura Council

In the late 1990s, there was apparently a debate within al-Qaeda's Shura Council (*majlis al-šūra*) on the necessity of obtaining weapons of mass destruction (*asliḥat al-ḍamār al-šāmil*). According to Muṣṭafā Ḥāmid, better known as Abū al-Walīd al-Maṣri, an al-Qaeda insider who wrote a detailed account of the history of the Arab-Afghans, the issue was raised because

¹¹³ Ayman al-Zawāhirī, quoted in Alan Cullison, "Inside al-Qaeda's hard drive", *The Atlantic Online* (September 2004). <http://www.theatlantic.com/doc/200409/cullison> (accessed 17 December 2007).

some members were concerned that the US might attack Muslims, and especially Afghanistan, with WMD.¹¹⁴ The al-Qaeda leadership was split in their views, however. According to al-Maṣri's account, there were several discussions between what he termed the 'hawks' and the 'doves' in the Shura council. The 'hawks' wing, led by al-Qaeda's military commander Muḥammad 'Āṭif (aka Abū Ḥafṣ al-Maṣri), argued strongly that obtaining WMD was necessary. They viewed the US as a merciless enemy that would not hesitate to crush even a weak enemy, as in the case of Japan at the end of WWII. In order to defend Muslims, and to retaliate in case of an attack, there was therefore a strategic need for al-Qaeda to obtain WMD. The hardliners also argued that the weapons should be stored on American soil in order to enable al-Qaeda to answer immediately, should the US invade Afghanistan. The 'doves', on the other hand, were sceptical of the whole idea of moving the battle to the enemy's land, and argued that it was important to retain international sympathy. Others pointed to the technical difficulties of producing WMD, and argued that al-Qaeda would only be able to obtain "primitive weapons" that could never match the sophistication and effectiveness of the West.¹¹⁵ While some argued that these primitive weapons would be sufficient to create fear and give the *mujāhidūn* credibility and prestige, others expressed concerns that they might provoke the US into an attack. The 'hawks', on their side, argued that the US was already attacking the Muslim world with weapons similar to WMD, and pointed to the use of depleted uranium in Iraq and the direct and indirect killing of millions of Iraqis during the 1990s. Abū al-Walīd al-Maṣri claims that Osama bin Laden did not support the hawks' view on WMD, but neither did he protest, "...because of his extreme politeness with those around him and his refrain from discomfiting or offending them."¹¹⁶ Al-Maṣri believes bin Laden was postponing discussing WMD strategy until such weapons were actually acquired, and in any case he seemed convinced that the war with the US would be won by then, using conventional weapons. Thus, Abū al-Walīd al-Maṣri's account shows that al-Qaeda's Shura Council was deeply split on the WMD issue prior to 9/11. This seems to

¹¹⁴ Abū al-Walīd al-Maṣri, "قصة الافغان العرب من الدخول إلى أفغانستان الى الخروج مع طالبان" (The story of the Arab Afghans from their arrival in Afghanistan until their departure with the Taliban). A draft copy of the manuscript was reviewed by *al-Šarq al-'awsaṭ* and summarized in a series of 21 articles appearing in the newspaper between 8-28 December 2004. The author is believed to be the Egyptian Muṣṭafā Ḥāmid, aka Abū al-Walīd al-Maṣri. See Mohammed Al Shafey, "The Story of Abu Walid al Masri: The Ideologue of the Afghan Arabs", *Ashark Alawsat English Edition*, <http://www.asharqalawsat.com/english/news.asp?section=3&id=7966> (accessed 25 June 2007).

¹¹⁵ Abū al-Walīd al-Maṣri, "قصة الافغان العرب من الدخول إلى أفغانستان الى الخروج مع طالبان" (The story of the Arab Afghans from their arrival in Afghanistan until their departure with the Taliban), Part (1), *al-Šarq al-'awsaṭ*, 8 December 2004; and Part (2), *al-Šarq al-'awsaṭ*, 9 December 2004.

¹¹⁶ *Ibid.*

have been due to a general reluctance to kill large numbers of civilians and escalate the conflict with the West. Al-Maṣri concludes, however, that

The conclusion reached [within the Shura Council] ... was that al-Qaeda must possess weapons for defence, based on what can be obtained or supplied in the nuclear, biological, or chemical fields, so that in a crisis, if the other side used weapons of mass destruction, it will not escape a deadly punishment.¹¹⁷

There are few other sources that can verify the details of Abū al-Walīd al-Maṣri's account. Recently, however, the former Libyan jihadist Nu'mān bin 'Uṭmān wrote an open letter to Ayman al-Zawāhirī, prompted by al-Zawāhirī's announcement of a merger between the Libyan Islamic Fighting Group (*al-Jamā'a al-'islāmiyya al-muqātila*) and al-Qaeda in November 2007.¹¹⁸ In the letter, bin 'Uṭmān states that he had attended a meeting with al-Qaeda leaders in Kandahar, in the summer of 2000, as part of a delegation from the LIFG. At the meeting, he claims, he warned al-Qaeda against attacking America with non-conventional weapons, arguing that it would result in "an occupation of the whole region, not only Afghanistan."¹¹⁹ In the letter he also refers to a dispute he had had with Abū Ḥafṣ al-Kūmandān [an alias for Muḥammad 'Āṭif¹²⁰] and recalls that 'Āṭif was "... strongly insisting on the necessity of obtaining those weapons and using them as a deterrent against the United States of America."¹²¹ Bin 'Uṭmān's brief account thus corresponds to Abū al-Walīd al-Maṣri's portrayal of Muḥammad 'Āṭif as one of the 'hawks' who expressed a strong interest in obtaining WMD. It also seems to confirm that there were disagreements between al-Qaeda leaders and their close associates about whether to obtain WMD or not.

Osama bin Laden's statements

According to an English translation of the above-mentioned letter by Nu'mān Bin 'Uṭmān, Osama bin Laden said during the same meeting that the search for and use of weapons of mass destruction is a "Sharia obligation".¹²² This appears to be based on an incorrect

¹¹⁷ al-Maṣri, "قصة الافغان العرب من الدخول إلى أفغانستان إلى الخروج مع طالبان", Part (1).

¹¹⁸ Ayman al-Zawāhirī, "وحدة الصف", (*Unity of the rank*), *al-ṣaḥāb* (ṣawwāl 1428 h. / November 2007), downloaded via Šabakat al-'ihlāṣ al-'islāmiyya, <http://www.ekhlaas.org/forum/showthread.php?t=94873> (5 November 2007).

¹¹⁹ Nu'mān bin 'Uṭmān, "مناصحة الي الدكتور ايمن الظواهري... سنعطيك ما تحتاجه لا ما تريده", (*Advice to Doctor Ayman al-Zawāhirī ... We will give you what you need, rather than what you want*), 6 November 2007. Received on e-mail from Nu'mān bin 'Uṭmān, via Brynjar Lia, on 15 November 2007. Also available on http://www.jeel-libya.com/show_article.php?section=1&id=1846 (accessed 15 December 2007).

¹²⁰ See for example Muḥammad 'Āṭif's biography on *Minbar al-tawḥīd wal-jihād*, entitled "الكومندان؛ أبو حفص المصري رحمه الله", www.tawhed.ws/r?i=3114 (accessed 22 November 2007).

¹²¹ bin 'Uṭmān, "مناصحة الي الدكتور ايمن الظواهري... سنعطيك ما تحتاجه لا ما تريده".

¹²² "Terrorism: Jihad has failed, former Libyan Islamist tells al-Qaeda", Adn Kronos International (7 November 2007), <http://www.adnkronos.com/AKI/English/Security/?id=1.0.1524980329> (accessed 17 December 2007).

translation of Bin ‘Uṭmān’s letter. Bin ‘Uṭmān is not referring to a statement uttered by bin Laden in the summer 2000 meeting, but to a statement that was made by bin Laden “in one of his televised speeches”.¹²³ In fact, I have not come across any account of bin Laden talking favourably of non-conventional weapons, except when asked directly about the topic by journalists, which occurred on at least five occasions between December 1998-November 2001. A recurrent topic in his speech is that Muslims have the right to obtain such weapons for defensive purposes:

Acquiring [chemical and nuclear] weapons for the defense of Muslims is a religious duty. If I have indeed acquired these weapons, then I thank God for enabling me to do so. 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.¹²⁴

Even though bin Laden describes the procurement of non-conventional weapons as a “religious duty” (a point often over-emphasized in the West), this should not be interpreted as expressing an ‘irrational obsession’ with WMD, but rather as motivated by specific political grievances. Bin Laden has on numerous occasions expressed resentment over the US domination and humiliation of Muslims, and this is again illustrated by the ‘double standard’ reflected by the US in allowing Israel to possess nuclear weapons, while preventing Muslim countries from obtaining them. In an interview with *al-Jazeera* he stated:¹²⁵

At a time when Israel stocks hundreds of nuclear warheads and when the Western crusaders control a large percentage of this weapon, we do not consider this [seeking to acquire nuclear, chemical and biological weapons] an accusation but a right and we reject anyone who accuses us of this ... We congratulated the Pakistani people when they achieved this nuclear weapon and we consider it the right of all Muslims to do so.¹²⁶

Osama bin Laden stresses in several of his statements that the purpose of obtaining WMD is defensive only. In October 2001, Abū Ḥafṣ al-Mawrītānī also echoed this view, stating that “if

¹²³ bin ‘Uṭmān, “مناصحة الي الدكتور ايمن الظواهري... سنعطيك ما تحتاجة لا ما تريده”.

¹²⁴ Osama bin Laden, interviewed by Rahimullah Yusufzai (TIME) on 23 December 1998. The interview was printed in “Conversation with Terror”, *TIME Magazine* (11 January 1999). <http://www.time.com/time/magazine/article/0,9171,989958-2,00.html> (accessed 17 December 2007).

¹²⁵ The interview was conducted in 1998 or 1999, and aired in full-length on al-Jazeera in September 2001. I was not able to obtain the original version of the interview, and therefore had to rely on English translations of it found in Lawrence, *Messages to the World*; and “Interview Usama bin Ladin gave to Al-Jazeera Arab television channel in 1998”, http://www.robert-fisk.com/usama_interview_aljazeera.htm (accessed 18 December 2007).

¹²⁶ Osama bin Laden, quoted in “Interview Usama bin Ladin gave to Al-Jazeera Arab television channel in 1998”.

such a weapon is at Al-Qa'ida's disposal, then it is a deterrent weapon, and not for initiating an action."¹²⁷

A shift from defensive to offensive use?

After 2001, certain al-Qaeda ideologues have expressed a more aggressive attitude towards the use of weapons of mass destruction, such as Sulaymān Abū al-Ġayṭ, a spokesman for al-Qaeda. In an article published in June 2002 entitled "In the Shadow of the Lances" (*taḥt ḡilāl al-rimāḥ*), he points out the atrocities already committed by the US against Muslim populations, including the mass killing of people, and the alleged use of biological and chemical weapons against Muslims. Based on the principle of equal retaliation, he argues:

We have not reached parity with them. We have the right to kill four million Americans, two million of them children, and to exile twice as many and wound and cripple hundreds of thousands. Furthermore, it is our right to fight them with chemical and biological weapons, so as to afflict them with the fatal and strange diseases that have afflicted the Muslims because of the [Americans'] chemical and biological weapons.¹²⁸

The call for retaliation and revenge against America and Israel's direct and indirect killing of millions of Muslims is echoed by several other statements, usually backed up by quoting from the Koranic verse (2:194): "If then any one transgresses the prohibition against you, Transgress ye likewise against him."¹²⁹ However, the most significant statement regarding the legitimacy of WMD was a *fatwā* issued by well-known militant Islamic scholar in Saudi Arabia, Nāṣir bin Ḥamd al-Fahd, in May 2003:

The attack against [the United States] by weapons of mass destruction [*aṣliḥa al-damār al-šāmīl*] is accepted, since Allah said: "If you are attacked you should attack your aggressor by identical force." Whoever looks at the American aggression against the Muslims and their lands in recent decades concludes that it is permissible... Some brothers have totalled the number of Muslims killed directly or indirectly by their weapons and come up with a figure of nearly 10 millions.¹³⁰

Al-Fahd's ruling was based on the same argumentation that Sulaymān Abū al-Ġayṭ and others had used previously, namely that of equal retaliation, but it carried considerably more weight

¹²⁷ Abū Ḥafṣ al-Mawrītānī, quoted in Thomas Hegghammer, "Dokumentasjon om al-Qaida - intervjuer, kommunikéer og andre primærkilder, 1990-2002" (Kjeller: FFI, 2002): 110.

¹²⁸ Sulaymān Abū al-Ġayṭ, "نحت ظلال الرماح الحلقة الثالثة"، (In the shadow of the lances, part three: Why should we fight America?), *Markaz al-dirāsāt wal-buḥūt al-islāmiyya* (2002). Accessed via archive: <http://web.archive.org/web/20030923214012/www.alneda.com/-subject=2&rec=716.htm> (accessed 12 November 2007).

¹²⁹ Translation by Yusuf Ali, via www.searchtruth.com (accessed 25 June 2007).

¹³⁰ Nāṣir bin Ḥamd al-Fahd, "رسالة في حكم استخدام أسلحة الدمار الشامل ضد الكفار"، (A treatise on the legal status of using weapons of mass destruction against infidels), *Minbar al-tawḥīd wal-jihād* (rabī' al-awwal, 1423 h./May 2003), <http://www.tawhed.ws/r?i=805> (accessed 26 May 2006).

because it came from a religious cleric with the authority to interpret the Koran and issue legal rulings. It is not clear whether there is any connection between al-Qaeda and the issuing of the *fatwā*, but, in any case, should al-Qaeda decide to carry out a WMD attack against the US, they would be able to cite this *fatwā* to deflect criticism for violating Islamic law. It can be noted that only Americans (and sometimes Israelis) have been singled out as legitimate targets for a WMD attack. There are hardly any examples of attempts to legitimize WMD attacks against other Western countries or nationalities.

It can be argued that al-Qaeda's various statements on WMD have evolved from expressing a defensive view towards a more offensive stance.¹³¹ However, these statements are very few in number, and made by people with different backgrounds and roles in the network, which means that such statements are not necessarily comparable. Rather than interpreting these statements as indicative of a shift in al-Qaeda's attitude towards CBRN weapons, I view them more as reflections of historical events and developments: after al-Qaeda lost its permanent base in Afghanistan, it has become less relevant to talk about WMD as deterrent weapons. At the same time, the invasions of Afghanistan and Iraq created new and powerful images of Muslim suffering, and possibly made it more legitimate to talk about 'revenge' against the US. The Iraqi war in particular was heavily used in jihadi propaganda as yet more 'proof' of America's evil intentions, which probably contributed to increasing the general hatred of the US.¹³²

Al-Qaeda's official statements, in any case, cannot be properly analyzed without seeing them in relation to other al-Qaeda discourses. A complete analysis of al-Qaeda's discourse would, however, be beyond the scope of this thesis. I have therefore limited myself to giving some examples from Osama bin Laden's communiqués, which might serve to place al-Qaeda's "WMD discourse" in some perspective. As mentioned above, bin Laden does not mention WMD in any of his communiqués, either before 2001 or since. In contrast, he tends to depict the spiritual strength of the *mujāhidūn* and their willingness to die as martyrs as the ultimate weapon with which to strike fear in Western hearts. In an audiotape issued in 2003, he said:

Do not be afraid of their tanks and armoured personnel carriers. These are artificial things. If you started suicide attacks you will see the fear of Americans all over the world.¹³³

¹³¹ René Pita, "Assessing al-Qaeda's chemical threat", *Athena Paper* 2, no. 7 (17 April 2007): 2-3, <http://www.athenaintelligence.org/op10.pdf> (accessed 18 December 2007).

¹³² Hegghammer, "Global Jihadism after the Iraq War", 22.

¹³³ Osama bin Laden, on audiotape received by *Associated Press* in April 2003, and quoted in Thomas Hegghammer, "Al-Qaida statements 2003-2004: A compilation of translated texts by Usama bin Ladin and Ayman al-Zawahiri" *FFI-Report* no. 2005/01428 (2005): 32.

He also tends to contrast the faith of Muslims with the militarily powerful, but spiritually weak West (thus playing upon a topic well known from modern Arabic literature, although from a more militant point of view):

Unafraid of the might and size of the infidels, an appreciable small number of committed mujahidin, shall prevail upon them. While they pride on their military resources, the mujahidin take the field through faith and conviction.¹³⁴

A strategic rationale for the use of WMD

Over the years, al-Qaeda ideologues have issued a number of strategic documents and studies, many of which give specific guidelines and directions about how to wage the war against the West.¹³⁵ The Syrian theoretician Muṣṭafā bin ‘Abd al-Qādir Sitt Maryam Nāṣar, better known as Abū Muṣ‘ab al-Sūrī, is perhaps one of the clearest examples of an al-Qaeda theorist providing a strategic rationale for the use of WMD against the United States.¹³⁶ In his main strategy book, the 1,600-page *Global Islamic Resistance Call (da‘wat al-muqāwama al-islāmiyya al-‘ālamīyya)*, he points out the extreme imbalance of power between the Muslim world and the US, and argues that obtaining and using WMD against the West is the only way to redress this balance. In the same study he also suggests the jihadi movement establish four types of military units (*sarāyā*), one of which should be dedicated to “strategic operations” (*al-‘amaliyyāt al-istrātījiyya*) and possess WMD capabilities.¹³⁷ The topic of WMD is mentioned in several other publications of his, one of his more infamous statements being

... if I had been consulted in such an operation [referring to 11 September], I would have suggested that the planes were international routes, and that they were filled with weapons of mass destruction.¹³⁸

¹³⁴ Osama bin Laden, in a speech held at his son’s wedding in 2001, quoted in Thomas Hegghammer, “Dokumentasjon om al-Qaida - intervjuer, kommunikéer og andre primærkilder, 1990-2002” (Kjeller: FFI, 2002): 146.

¹³⁵ For a description of the ‘jihadi strategic studies’ genre, see Brynjar Lia and Thomas Hegghammer, “Jihadi Strategic Studies: The alleged Al Qaida policy study preceding the Madrid bombings”, *Studies in Conflict and Terrorism* 27 (2004): 355–375.

¹³⁶ Brynjar Lia, *Architect of Global Jihad: The Life of Al Qaeda Strategist Abu Mus'ab Al-Suri* (London and New York: Hurst and Columbia University Press, 2007): 309-310.

¹³⁷ Abū Muṣ‘ab al-Sūrī, “دعوة المقاومة الإسلامية العالمية” (The Global Islamic Resistance Call) (place and publisher unknown, 2004): 1399-1400, downloaded via Minbar Sūriyā al-islāmī, www.islam-syria.com/vb/ on 30 November 2005.

¹³⁸ Abū Muṣ‘ab al-Sūrī, “على إعلان وزارة الخارجية الأمريكية دأ بيان صادر عن مكتب الشيخ أبو مصعب السوري ر” (Communiqué from the office of sheikh Abū Muṣ‘ab al-Sūrī in response to the statement of the U.S. Department of State), 15/11/1425 h./27 December 2004, www.deluxesuperhost.com/~morshid/tophacker/index.php?subject=18rec=29 (accessed January 2005).

In a lecture held in Kabul, 1999, al-Sūrī described WMD as “... quick and easy and can be obtained from most mafias in the world,”¹³⁹ and encouraged his audience to carry out WMD attacks in Western countries. By the time he had finished *The Global Islamic Resistance Call*, more than three years after 9/11, and after the destruction of al-Qaeda’s sprawling training complexes in Afghanistan, he had apparently realized that obtaining WMD was beyond the reach of al-Qaeda. Although the role and importance of WMD are touched upon in his book, he emphasizes that his strategy is one of exhausting the enemy, and not demolishing it. Viewing the current security environment as extremely harsh, he argues that the era of hierarchical organisations has ended, and that resistance has to rely more on acts of “individual terrorism” (*al-’irhāb al-farḍī*) carried out by small cells with no organizational ties except a common ideology. Similar to Louis Beam’s ‘Leaderless Resistance’ concept, he envisions the ‘Global Islamic Resistance’ as a campaign of small- and medium-scale terrorist operations that are difficult to counter because they spring from individual initiatives, rather than from a central organisation.¹⁴⁰ It is therefore a misconception that non-conventional weapons constitute a key part of al-Sūrī’s strategic theory, at least in his post-9/11 writings.¹⁴¹ In the 1,600-page *Global Islamic Resistance Call*, the topic of WMD is granted less than one page in total.

Reservations concerning CBRN use

There are a few accounts of al-Qaeda members expressing a reluctance to use WMD, although these are hard to verify. When Khalid Sheikh Muhammad and Ramzī bin al-Šībh volunteered for an interview with al-Jazeera journalist Yousri Fouda in June 2002 to talk about the September 11 attacks, Muhammad stated that “... we first thought of striking at a couple of nuclear facilities but decided against it for fear it would go out of control”.¹⁴² However he stated immediately afterwards, “The attacks were designed to cause as many deaths as possible and havoc and to be a big slap for America on American soil.”¹⁴³ It is hard to assess the significance of this statement. It could simply indicate an unfamiliarity with, and thus a fear of using, WMD. Or it could express a reluctance to use more violence than deemed necessary, thus recalling Osama bin Laden’s belief at the time that a few conventional attacks

¹³⁹ Abū Muṣ’ab al-Sūrī, “الجهاد هو الحل” (Jihad is the solution), audiotaped lecture, tape no.10b, 06:28 – 16:00, downloaded via Muntadā al-sawt, www.saowt.com/forum/showthread.php?t=16158 (accessed October 2006).

¹⁴⁰ Lia, *Architect of Global Jihad*, 6.

¹⁴¹ *Ibid.*, 310.

¹⁴² Yousri Fouda and Nick Fielding, *Masterminds of Terror: The truth behind the most devastating terrorist attack the world has ever seen* (Edinburgh: Mainstream Publishing, 2003), 114.

¹⁴³ Fouda and Fielding, *Masterminds of Terror*, 114.

against the US would be sufficient. The idea of striking nuclear facilities, however, has been mentioned in other sources as well, although there is little evidence that such ideas have gone beyond the theoretical.¹⁴⁴

The view that humiliating America was more important than causing mass killing was also expressed by Yūsuf al-'Ayīri, the former leader of al-Qaeda on the Arabian Peninsula (*qā'idat al-jihād fī jazīrat al-'arab*).¹⁴⁵ In an audio lecture on guerrilla warfare given in 2002 or 2003, he stated that the goal of striking the World Trade Center in 2001 was not to kill as many people as possible; if this had been the case, the attacks would have been carried out later in the day after more people had arrived at work at the WTC. Rather he emphasizes that "...if you want to anger the enemy it is not by how many people you kill, but rather by showing its defeat in front of the world."¹⁴⁶

5.1.2 Actual plans and activities

As stated previously, this thesis will focus on the period from 1996-2006. With regards to the Sudan period and bin Laden's alleged quest for nuclear weapons, the open sources have been summarized in the literature review in chapter two. I have not come across any new sources to shed light on these activities, or sources about bin Laden's alleged attempts to buy a chemical weapons factory in Sudan. In this subchapter, I have chosen to focus on al-Qaeda's activities in Afghanistan from 1996 onwards as reflected by documents and facilities discovered in Afghanistan, eyewitness accounts and interrogation reports.

Chemical and biological research

In late 2001, a *Wall Street Journal* journalist obtained a second-hand computer from a local merchant in Kabul. It turned out that the computer had actually been looted from an office used by al-Qaeda leaders, and contained hundreds of documents and video files dating back to 1997. Among the users of the computer were two of al-Qaeda's senior leaders, Ayman al-

¹⁴⁴ "Verbatim Transcript of Combatant Status Review Tribunal Hearing for ISN 10024 [Khalid Sheikh Muhammad]", *United States Department of Defense*, http://www.defenselink.mil/news/transcript_ISN10024.pdf (accessed 18 December 2007).

¹⁴⁵ Strictly speaking, al-'Ayīri should be placed in the 'affiliates' level of the analysis, but was placed here because my 'affiliates' level has chosen to focus on al-Qaeda in Iraq. Besides, al-'Ayīri is widely known outside the circles of al-Qaeda on the Arabian Peninsula, especially due to his military and tactical instruction manuals, which are widely distributed on the Internet.

¹⁴⁶ Yūsuf al-'Ayīri, "درس للشهيد يوسف العبيري رحمه الله عن حرب المدن" (Lesson on urban warfare by the martyred sheykh Yūsuf al-'Ayīri), undated audiofile, downloaded 26 June 2007, *Mawqī' al-qā'idūn*, www.qa3edoon.com/vivi.htm (accessed 26 June 2007).

Ẓawāhirī and Muḥammad ‘Āṭif. According to the *Wall Street Journal*’s summary,¹⁴⁷ some of the documents seemed to indicate that Ayman al-Ẓawāhirī was responsible for a biological and chemical weapons development programme codenamed *al-zabādī* (curdled milk). A memo apparently written by al-Zawahiri to Muḥammad ‘Āṭif in April 1999 notes that “the destructive power of these weapons is no less than that of nuclear weapons”, and that “despite their extreme danger, we only became aware of them when the enemy drew our attention to them by repeatedly expressing concern that they can be produced simply.”¹⁴⁸ It appeared that al-Zawahiri had studied foreign scientific articles and wrote summaries of them in Arabic for Muḥammad ‘Āṭif.¹⁴⁹ The memo also suggested studying various open sources on chemical and biological warfare, and provided a list of recommended articles published between the 1920s–1950s in scientific journals such as *Science* and *New England Journal of Medicine*. A file dated 7 May 1999 indicated that al-Qaeda leaders had earmarked US\$ 2,000-4,000 for the “start-up costs” of the programme. Further, the *Wall Street Journal* writes:

In a letter dated May 23 and written under one of Zawahiri’s aliases, the author reports discussing some ‘very useful ideas’ during a visit to Abu Khabab [...]. Particularly encouraging, the letter in the computer files said, was a home-brew nerve gas made from insecticides and a chemical additive that would help speed up the penetration into the skin.¹⁵⁰

In a letter dated May 26, the same author expressed that he was “very enthusiastic” about the *al-zabādī* project, and that in particular, he was pleased with Abu Khabab’s “significant progress.” A memo from June 1999 suggested that the program should seek cover and talent in educational institutions, which it said would be “more beneficial to us and allow easy access to specialists, which will greatly benefit us in the first stage, God willing.”¹⁵¹

The *Wall Street Journal* account reveals some interesting details: first, it appears that Ayman al-Ẓawāhirī did not decide to pursue chemical and biological weapons due to a personal affinity for such weapons, but rather that he was inspired by Western threat assessments that said they were easy to manufacture. Second, that the amount of money dedicated to the

¹⁴⁷ The documents have not been made publicly available, so I have therefore had to rely on *The Wall Street Journal*’s summary of the articles. Alan Cullison and Andrew Higgins, “Computer in Kabul holds chilling memos: PC apparently used by al-Qaeda leaders reveals details of four years of terrorism”, *The Wall Street Journal*, 31 December 2001; and Alan Cullison, “Inside al-Qaeda’s hard drive”, *The Atlantic Online* (September 2004), <http://www.theatlantic.com/doc/200409/cullison> (accessed 17 December 2007).

¹⁴⁸ Alan Cullison, “Inside al-Qaeda’s hard drive”, *The Atlantic Online* (September 2004). <http://www.theatlantic.com/doc/200409/cullison> (accessed 17 December 2007).

¹⁴⁹ Alan Cullison, “Inside al-Qaeda’s hard drive”, *The Atlantic Online* (September 2004). <http://www.theatlantic.com/doc/200409/cullison> (accessed 17 December 2007).

¹⁵⁰ Alan Cullison and Andrew Higgins, “Computer in Kabul holds chilling memos: PC apparently used by al-Qaeda leaders reveals details of four years of terrorism”, *The Wall Street Journal*, 31 December 2001.

¹⁵¹ *Ibid.*

programme in 1999 was relatively small. Third, that the programme apparently focused on developing a *crude chemical agent*, indicated by the fact that it was to be made from insecticides and a “chemical additive that would help speed up the penetration into the skin.” According to a chemist at the Norwegian Defence Research Institute, insecticides can most likely not be used to manufacture military-grade nerve gases. Instead, the “chemical weapon” described in the *Wall Street Journal*’s documents sounds like a description of a common assassination tool that was taught about in al-Qaeda’s training camps, a poison (the insecticides) mixed with an oily liquid that facilitates skin penetration.¹⁵² Again, it is worth pointing out that the use of the word “home-brewed nerve gas” is not necessarily synonymous with *militarily effective* nerve gases (such as VX or sarin), although it cannot be ruled out that al-Qaeda was seeking such capabilities as well.

The information revealed by the *Wall Street Journal* must be seen in relation to other sources. One indication that al-Qaeda was seeking more sophisticated chemical agents is an unclassified CIA report released in May 2003 that stated, “[a]nalysis of an al-Qa’ida document recovered in Afghanistan in summer 2002 indicates the group has crude procedures for making mustard agent, sarin and VX”.¹⁵³ The report does not give any further details, but shows a picture of a handwritten page from one of the manuals. Possessing instructions, and actually mastering the procedure, are of course two different things. More credible evidence of al-Qaeda’s chemical and biological activities would be the discovery of actual precursors or agents. Some reports have suggested that coalition forces actually found traces of anthrax and ricin at several sites during operations in Afghanistan.¹⁵⁴ Another report states, however, that “the trace evidence turned out to be insufficient to permit an accurate determination.”¹⁵⁵

After the capture of Khalid Sheikh Muhammad in March 2003, some new details have been revealed. In his Combatant Status Review Tribunal Hearing on 10 March 2007, Muhammad stated that “I was directly in charge, after the death of Sheikh Abu Hafs Al-Masri Subhi Abu Sittah, of managing and following up on the Cell for the Production of Biological Weapons, such as anthrax and others, and following up on Dirty Bomb Operations on American Soil”

¹⁵² E-mail correspondence with Monica Endregard and Leif Haldor Bjerkeseth, Norwegian Defence Research Inst. (FFI), November 2007.

¹⁵³ “Terrorist CBRN: Materials and effects (U)”, *Central Intelligence Agency* (May 2003), https://www.cia.gov/library/reports/general-reports-1/CBRN_threat.pdf (accessed 19 December 2007).

¹⁵⁴ See for example Jonathan Spyer, “The al-Qa’ida network and weapons of mass destruction”, *MERIA Journal* 8, no. 3 (September 2004).

¹⁵⁵ Air Force General Richard Meyers, quoted in Jeffrey M. Bale et al., “Ricin found in London: An al-Qa’ida connection?”, *CNS Reports* (23 January 2003), <http://cns.miis.edu/pubs/reports/ricin.htm#fnB18> (accessed 13 March 2007).

(Abū Ḥafṣ al-Maṣri, aka Muḥammad 'Āṭif, was killed in a US air raid on 16 November 2001).¹⁵⁶ According to media reports, papers and computer hard drives recovered during his capture included orders to obtain *Bacillus anthracis*, as well as detailed production schedules and inventories of the necessary equipment. Judging by the uncovered documents, however, Khalid Sheikh Muhammad lacked knowledge of the specialist milling techniques required to produce military-grade, air-borne anthrax.¹⁵⁷ This indicates that senior al-Qaeda members have been involved in chemical and biological research since at least 1999, possibly with the ambition to obtain militarily effective agents. At the time of Muhammad's arrest in 2003, however, the plans appeared still to be at a rudimentary stage.

What about al-Qaeda's radiological and nuclear ambitions?

Khalid Sheikh Muhammad also admitted during his tribunal hearing that he had been in charge of “following up on Dirty Bomb Operations on American Soil.”¹⁵⁸ Various sources have claimed that al-Qaeda had expressed an interest in radiological and nuclear weapons in the Afghanistan period. In January 2002, CNN reported that they had found a stack of documents in a Kabul house “reportedly used by Al Qaeda operatives.”¹⁵⁹ Among the documents there were several explosives manuals and formulations, as well as a document entitled “*al-qanābil al-kubrā*” (translated as “superbombs”) that appeared to describe a nuclear device. Experts who reviewed the document, however concluded that the device was unworkable.¹⁶⁰ The CNN report goes on to claim that although the bomb design required plutonium to create a nuclear explosion, it “... could become something called a radiological dispersal weapon” if other types of radioactive material were used instead.¹⁶¹ However, it is unclear whether the option of making an RDD is actually described in the ‘superbomb’ document, or if this is mere speculation added by the CNN correspondent (especially since the

¹⁵⁶ “Verbatim Transcript of Combatant Status Review Tribunal Hearing for ISN 10024 [Khalid Sheikh Muhammad]”, *United States Department of Defense*, 17. Available: http://www.defenselink.mil/news/transcript_ISN10024.pdf (accessed 10.03.2007).

¹⁵⁷ David Rennie, “Al-Qaeda close to making anthrax, says US”, *Telegraph*, 24 March 2003, <http://www.telegraph.co.uk/news/main.jhtml;jsessionid=S0LTUOOSSJBEXQFIQMGFFWAVCBQWIV0?xml=/news/2003/03/24/walq24.xml> (accessed 9 Nov 2007).

¹⁵⁸ “Verbatim Transcript of Combatant Status Review Tribunal Hearing for ISN 10024 [Khalid Sheikh Muhammad]”, *United States Department of Defense*, 17. Available: http://www.defenselink.mil/news/transcript_ISN10024.pdf (accessed 10.03.2007).

¹⁵⁹ Mike Boettcher and Ingrid Arnesen, “Al Qaeda documents outline serious weapons program”, *CNN*, 25 January 2002, <http://archives.cnn.com/2002/US/01/24/inv.al.qaeda.documents/index.html> (accessed 8 Nov 2007).

¹⁶⁰ Ibid; “Live from Afghanistan – Was Al Qaeda working on a super bomb?” *CNN*, 24 January 2002 20:00 ET, transcript available on <http://www.isis-online.org/publications/terrorism/transcript.html> (accessed 8 Nov 2007).

¹⁶¹ “Live from Afghanistan – Was Al Qaeda working on a super bomb?” *CNN*, 24 January 2002 20:00 ET, transcript available on <http://www.isis-online.org/publications/terrorism/transcript.html> (accessed 8 Nov 2007).

correspondent goes on to say, “the documents don’t reveal if al Qaeda tried to build such a weapon.”) This ambiguity is not reflected in an analysis by Jonathan Spyer, who wrote in an article in 2004 that the ‘superbomb’ manual “... contained a working blueprint for the production and detonation of a radiological bomb.”¹⁶² This reflects some of the difficulties of relying on second-hand sources. There is, in my opinion, an important difference between a document describing nuclear weapons, and a document describing a radiological dispersal device (RDD). Several other sources, however, have pointed out that al-Qaeda might have accessed radioactive material in Kabul, and according to British authorities there was evidence that al-Qaeda had already constructed a small dirty bomb in the Afghan city of Herat, using radioactive isotopes from medical equipment. No ready-made bomb was ever found, however.¹⁶³

The documents found by CNN indicate that certain al-Qaeda members were interested in nuclear weapons on a theoretical level, but there is no indication that this was a central priority.¹⁶⁴ David Albright, a nuclear-weapons expert consulted by CNN, concludes after reviewing the material that “there is no indication that al Qaeda’s nuclear work has gone beyond theory.”¹⁶⁵ He noted, however, that the formulations for *regular* explosives were “much more polished” than those commonly circulated on the Internet, and that al-Qaeda had apparently made significant efforts to both test and improve these formulae.¹⁶⁶

The training camps: educating chemical experts?

The most infamous example of al-Qaeda’s CBRN activities in Afghanistan is probably a video obtained by CNN in 2002, which shows the testing of a poisonous gas on dogs.¹⁶⁷ Experts disagree as to what kind of gas was tested, but Ahmed Ressam, an al-Qaeda operative who was arrested in 1999, testified that he had witnessed such an experiment in which hydrogen cyanide had been used. The dog was kept in a confined area, and the gas was manufactured simply by mixing two reactants, a crude procedure commonly described in

¹⁶² Jonathan Spyer, “The al-Qa’ida network and weapons of mass destruction”, *MERIA Journal* 8, no. 3, <http://meria.idc.ac.il/journal/2004/issue3/spyer.pdf>.

¹⁶³ Bergen, *The Osama bin Laden I know*, 344-345; Eric Lichtblau and David Johnston, “Confidential advisory warns of rise in possible terror threats”, *The New York Times* 5 February 2003; Josh Meyer, “Al Qaeda feared to have ‘Dirty Bombs’”, *Los Angeles Times* 8 February 2003; and “BBC says Al Qaeda produced a ‘Dirty Bomb’ in Afghanistan”, *The Associated Press*, 31 January 2003.

¹⁶⁴ I disagree with the CNN correspondent’s description of the documents as indicative of a “serious weapons programme with heavy emphasis on developing a nuclear device.”

¹⁶⁵ Boettcher and Arnesen, “Al Qaeda documents outline serious weapons program”; “Live from Afghanistan – Was Al Qaeda working on a super bomb?”

¹⁶⁶ “Live from Afghanistan – Was Al Qaeda working on a super bomb?”

¹⁶⁷ Spyer, “The al-Qa’ida network and weapons of mass destruction”.

manuals posted on al-Qaeda web pages.¹⁶⁸ According to Ressam, the experiment he had witnessed had been part of a training course he had taken at the Derunta camp, located outside Jalalabad, Afghanistan. On the course he had also learned to mix poisons with another substance and “smear them on doorknobs,” with the aim of assassinating “intelligence officers and other VIPs.”¹⁶⁹ Judging from Ressam’s testimony, the course was designed to teach crude poison-making methods, but not to pass on advanced CBRN knowledge, or even to test or develop crude CBRN devices. Ressam stated that that no delivery methods for cyanide gas were actually tested, although theoretical suggestions were given:

Q: You were trained to use cyanide by placing the cyanide near the air intake of a building, correct?

A: They gave us some examples, but we did not try them out actually.¹⁷⁰

According to witnesses, the Derunta training complex offered a range of specialized courses, of which crude poison-making was only one of several disciplines that the operatives would be taught.¹⁷¹ Judging from Ressam’s testimony, there are no indications that the course was designed to teach battalions of “CBRN specialists” for al-Qaeda. Rather, the aim was apparently to widen the repertoire of the operatives’ tactics and the use of crude poisons or poisonous gases would be one of several options.

5.1.3 The CBRN interest of Al-Qaeda central

Based on the sources reviewed above, it appears that senior al-Qaeda members were interested in researching the topic of CBRN weapons, and possibly sought to manufacture or obtain chemical and biological agents. Due to the small amount of money allocated to the programme, and the fact that no viable warfare agents were ever confirmed found in Afghanistan, these efforts seem to have been limited. This leads to my conclusion that al-Qaeda central showed no obsession with CBRN materials or with high-tech weapons, unlike Aum Shinrikyo. However, they wanted to research options in order to widen their repertoire of tactics, and were possibly also inspired by the threat assessments produced in the West that these weapons were easy to obtain.

In addition to these efforts by senior al-Qaeda members, there also seems to have been an organized effort at certain training camps to teach recruits crude methods to make poisons and

¹⁶⁸ “United States of America v. Mokhtar Haouari, Defendant”, United States District Court, Southern District of New York, 5 July 2001, <http://f1.findlaw.com/news.findlaw.com/hdocs/docs/haouari/ushaouari070501rassamtt.pdf> (accessed 8 Nov 2007).

¹⁶⁹ “United States of America v. Mokhtar Haouari”.

¹⁷⁰ Ibid.

¹⁷¹ See for example Ibid.; Omar Nasiri, *Mitt liv med al-Qaeda* (Oslo: Gyldendal, 2006).

poisonous gases. These courses appear to be part of a more comprehensive course to teach basic guerrilla tactics, not a course to pass on advanced CBRN knowledge or any joint effort to innovate CBRN devices.

One weakness in the above argument is that most of my information regarding al-Qaeda Central's actual CBRN activities is connected to the period before November 2001. There is very little open-source information on the activities of the al-Qaeda leadership after 2001, at least with regards to CBRN weapons. Other developments, however, indicate that the active pursuit of CBRN by al-Qaeda Central is less likely now than it was before 2001. One reason for this is that al-Qaeda now does not enjoy the freedom of operation it had before 9/11. Possibly, al-Qaeda still has access to training camps in the border region between Afghanistan/Pakistan, but these are small and mobile, rather than the permanent structures that existed in Afghanistan before the invasion. Secondly, there are no indications that al-Qaeda has abandoned the 'conventional' option. On the contrary, most attacks planned by al-Qaeda central after 9/11 rely on conventional explosives and hijackings. Khalid Sheikh Muhammad stated during interrogations that he had plans for a "second wave" of attacks on the US that was to be carried out in the same way as the 9/11 attacks. The so-called '20th hijacker'¹⁷², Zacharias Moussaoui, was instructed to take flying lessons in the US to this end.¹⁷³ During his tribunal hearing in 2007, Muhammad claimed that he was responsible for organizing the second wave, and that it was supposed to target the Empire State Building and three other high-rise buildings on US soil. He was also alleged to have been involved in a number of other plots, a majority of which were aimed at destroying various buildings, bridges, planes and ships. CBRN weapons are not mentioned as a part of any of these plots, except in one instance when he claimed responsibility for "... surveillance needed to hit nuclear power plants that generate electricity in several U.S. states".¹⁷⁴ There is little doubt that al-Qaeda still has a strategy of staging spectacular, mass-casualty attacks, but there are no indications that al-Qaeda views CBRN materials as the only possible type of weapon.

¹⁷² See, for example "Profile: Zacarias Moussaoui", *BBC News*, 25 April 2006, <http://news.bbc.co.uk/2/hi/americas/4471245.stm> (accessed 29 June 2007).

¹⁷³ "Substitution for the testimony of Khalid Sheikh Mohammed", *U.S. v. Moussaoui*, <http://www.rcfp.org/moussaoui/pdf/DX-0941.pdf> (accessed 29 June 2007).

¹⁷⁴ "Verbatim Transcript of Combatant Status Review Tribunal Hearing for ISN 10024 [Khalid Sheikh Muhammad]", *United States Department of Defense*, 18-19.

5.2 Al-Qaeda affiliates

Well-known al-Qaeda affiliates include Al-Qaeda on the Arabian Peninsula (*tanẓīm qā'idat al-jihād fī jazīrat al-'arab*); Al-Qaeda in the Land of the Two Rivers (*qā'idat al-jihād fī bilād al-rāfiḍayn*), currently known as The Islamic State of Iraq (*dawlat al-'irāq al-'islāmiyya*); Al-Qaeda in the Islamic Maghreb (*tanẓīm al-qā'ida bi-bilād al-maġrib al-'islāmī*), and Al-Qaeda in the Land of Khurasan (*qā'idat al-jihād fī bilād ḥarāsān*).

This sub-chapter will concentrate on al-Qaeda's regional affiliates in Iraq, because very little documentation has been found on the CBRN interest of al-Qaeda affiliates elsewhere. It would be interesting to conduct a comparative study of the CBRN interest of various regional affiliates of al-Qaeda. However, this is beyond the scope of this study, as it would require a thorough investigation into each regional group. The purpose of this thesis is, rather, to get an overall picture of the al-Qaeda network and its internal dynamics. For this purpose, the Iraqi-based al-Qaeda affiliates have been used as an example of a regional group that has published statements or conducted actions relating to CBRN. This does not mean that Iraqi al-Qaeda affiliates necessarily display the same interest in CBRN weapons as other al-Qaeda affiliates.

The particular difficulty in using Iraq as an example is that it is sometimes hard to determine whether the group in question is an 'al-Qaeda affiliate' or not. In general, Abū Muṣ'ab al-Zarqāwī and his network are seen as al-Qaeda affiliates. However, his group did not adopt the name Qā'idat al-jihād fī bilād al-rāfiḍayn until 2004. Before that, his network was known as al-Tawḥīd wal-jihād. It does not make sense, however, to only look at statements and actions taking place since the name change, as they might be more properly understood by seeing them in relation to previous activities. Moreover, both before and after al-Zarqāwī adopted the name of al-Qaeda, it has been disputed whether he should be labelled an 'al-Qaeda affiliate' or not. Several sources describe him as a rival of bin Laden, rather than an affiliate. In October 2006, his organization joined an umbrella organization, the Mujahedin Shura Council (*majlis šūra al-mujāhidīn*) along with other Sunni insurgent groups that changed their name to the Islamic State of Iraq (*dawlat al-'irāq al-'islāmiyya*) in December the same year. Activities conducted by Sunni insurgents in Iraq are, therefore, not necessarily affiliated with the al-Qaeda network or with al-Qaeda ideology. However, the activities of the al-Zarqāwī network and later, the Islamic State of Iraq (ISOI), can be assumed to be more 'al-Qaeda-like' than the activities of other insurgent groups.

5.2.1 The case of Iraq

The al-Abud Network

The most organized effort to acquire CBRN capabilities in Iraq was not carried out by an al-Qaeda affiliate, but by locally based insurgents labelled the "al-Abud network" by investigators.¹⁷⁵ A short description of the case has been included here to show that it is not only al-Qaeda affiliates who have tried to pursue CBRN weapons in Iraq. In late 2003-early 2004, the al-Abud network was reported to be actively seeking chemical weapons according to a 2004-report by the Special Advisor to the Director of Central Intelligence (DCI).¹⁷⁶ The al-Abud network is described as "Fallujah-based insurgents belonging mostly to the Jaysh Muhammad organization", a pro-Saddam insurgency group.¹⁷⁷ According to the report, the network recruited two chemists and attempted to produce tabun and nitrogen mustard without success, but managed in March 2004 to produce small amounts of ricin cake "using widely distributed terrorist literature".¹⁷⁸ Coalition forces also discovered nine mortar rounds filled with poison. According to detainee accounts, the network planned to use these rounds against Coalition forces. This would most likely not have worked, however, because the poison would decompose due to the explosion. In general, the network's CBW efforts were very primitive, but they could have developed further had the network's activities not been disrupted by the Iraq Survey Group (ISG) in 2004. The case of the al-Abud network suggests that chemicals were relatively easily accessible in Iraq at the time. According to the report, the network bought its chemicals at the chemical *sūq* (market) in Baghdad.

The Amman plot and Abū Muṣ'ab al-Zarqāwī's statement

In April 2004, Jordanian police reportedly thwarted a plot to attack several targets in Amman, Jordan with suicide truck bombs filled with explosives and possibly also chemicals. The leader of the cell was the Jordanian 'Azmī al-Jayūsī, who claimed that he had acted on orders

¹⁷⁵ Robert Wesley, "Al-Muhajir calls for nuclear scientists to join the Mujahideen in Iraq", *Terrorism Focus*, Volume 3, Issue 39 (October 10, 2006),

<http://www.jamestown.org/terrorism/news/article.php?articleid=2370157> (accessed 6 May 2007).

¹⁷⁶ "Comprehensive report of the Special Advisor to the DCI on Iraq's WMD", 30 September 2004, 93-95. Available at http://www.npr.org/documents/2004/cia_wmd/vol3.pdf (accessed 4 June 2007).

¹⁷⁷ Ibid.

¹⁷⁸ "Ricin cake" is made from castor beans (it is obtained by removing the skin of the castor seeds and then grinding the meal in a blender). It may contain extremely small amounts of ricin poison, which occurs naturally in the ricin seed, and it might be harmful if swallowed or injected. Extracting and purifying the ricin poison, however, requires a more tedious process than the method often described in usual "terrorist literature" such as Maxwell Hutchkinson, *The poisoner's Handbook* (El Dorado: Desert Publications, 2000).

from Abū Muṣ'ab al-Zarqāwī, whom he had met in Afghanistan. In his confession al-Jayūsī stated:

In Herat, I began training for Abū Muṣ'ab, the training included high-level courses on explosives and poisons. I then pledged allegiance to Abū Muṣ'ab al-Zarqāwī and agreed to work for him without any discussion.¹⁷⁹

According to al-Jayūsī, al-Zarqāwī had sent him to Jordan to prepare for the plot along with some other operatives, and supplied them with money and the necessary documents. The plan was allegedly to fill trucks with explosives and carry out suicide attacks against Jordan's General Intelligence Department, the Prime Minister's Office and the US Embassy. During several police raids in April 2004, the police arrested six suspects and killed four, as well as seizing three trucks filled with more than 20 tons of chemicals and precursors for explosives. According to a report broadcast on Jordanian television on April 26, one of the trucks was supposed to contain a chemical bomb that "...could have killed 80,000 Jordanian citizens."¹⁸⁰ This was most likely exaggerated by the Jordanian authorities. Based on the materials seized, it is very unlikely that the cell was capable of making such a deadly weapon. Most reports state that the chemicals found were common precursors for explosives, such as nitro-glycerine and hydrogen peroxide, although some sources claimed that cyanide and chlorine had also been seized.¹⁸¹ In any case, it is very hard to cause mass death by adding a toxic chemical to conventional explosives, as demonstrated by recent attempts to add chlorine to truck-bombs in Iraq (more on this below). According to a US official, what was recovered in Jordan "... was not a chemical weapon and did not include any poisons, but that it did include chemicals designed to increase its conventional explosive impact."¹⁸² In October 2004, a total of 13 suspects were charged with "conspiracy to terrorist attacks, manufacturing explosives, belonging to an illegal organization and possession of weapons for illegal use."¹⁸³ Nine of them (seven Jordanians and two Syrians) were present in court, while four, among them Abū Muṣ'ab al-Zarqāwī, were charged in absentia. In February 2006, five out of nine suspects were

¹⁷⁹ 'Azmī al-Jayūsī, quoted in "إعترافات خلية "الزرقاوي" للتلفزيون الأردني", *CNN Arabic* (26 April 2004), http://arabic.cnn.com/2004/middle_east/4/26/JTV-Qaedainterview/index.html (accessed 19 December 2007).

¹⁸⁰ Quoted in Terence Jeffrey, "Did Colin Powell hit a bull's-eye?", 5 May 2004, *townhall.com*, http://www.townhall.com/columnists/TerenceJeffrey/2004/05/05/did_colin_powell_hit_a_bulls-eye?page=full&trackbacks=true (accessed 6 July 2007).

¹⁸¹ "Amman, Jordan", *Monterey WMD Terrorism Database*, 20 July 2004, <http://cns.miis.edu/db/wmdt/incidents/1731.htm> (accessed 6 July 2007).

¹⁸² Terence Jeffrey, "Did Colin Powell hit a bull's-eye?", 5 May 2004, *townhall.com*, http://www.townhall.com/columnists/TerenceJeffrey/2004/05/05/did_colin_powell_hit_a_bulls-eye?page=full&trackbacks=true (accessed 6 July 2007).

¹⁸³ "Amman, Jordan", *Monterey WMD Terrorism Database*, 20 July 2004, <http://cns.miis.edu/db/wmdt/incidents/1731.htm> (accessed 6 July 2007).

sentenced to death. Two were given prison terms, while the last two were acquitted of all charges. Al-Zarqāwī and the three others tried in absentia were also sentenced to death.¹⁸⁴

Afterwards, Abū Muṣʿab al-Zarqāwī himself released a statement in which he accepted responsibility for the plot, but denied the chemical aspect of it. Also, he denied the accusations of Jordanian intelligence that his intention was to “murder Muslims and kill innocent citizens.”¹⁸⁵ However, he also stated that “... if we possessed such a bomb, we would not have hesitated for one moment to strike cities in Israel, such as Eilat and Tel Aviv and others.”¹⁸⁶ Al-Zarqāwī’s unwillingness to use CBRN weapons in Muslim countries, due to a fear that they might harm large numbers of innocent Muslims, corresponds to views expressed by other al-Qaeda leaders. At the same time, he seemed to have no restrictions with regards to carrying out large-scale conventional attacks in Muslim countries, presumably because it would be easier to direct them against a specific target and to justify the amount of collateral damage caused by them.

On 23 November 2004, Iraqi and coalition forces discovered what they labelled a “chemical/explosive weapons laboratory” in Fallujah, Iraq. The laboratory contained simple laboratory equipment such as beakers, flasks and gloves, and chemicals that could be used to make poisons and explosives. The United States Marine Corps (USMC) released a list of chemicals found: three substances were connected to chemical weapons, potassium cyanide, hydrochloric acid and sulphuric acid. One of the notebooks found was reported to contain “formulas for anthrax, chemical blood agents and explosives.” The amount of chemicals was not stated, but pictures showed two shelves of plastic bags, one of them labelled “potassium cyanide.” Inside the laboratory was the banner of al-Zarqāwī’s group, al-Tawḥīd wal-jihād.¹⁸⁷

The statement of Abū Ḥamza al-Muhājir

On 28 September 2006, Abū Ḥamza al-Muhājir, the leader of al-Qaeda in Iraq, issued an audiotape in which he urged scientists from various fields, including non-conventional weapons, to come to Iraq, noting that “...the American military bases, with their large areas, are an ideal environment for trying out your non-conventional bombs: the biological and the

¹⁸⁴ Ibid.

¹⁸⁵ Abū Muṣʿab al-Zarqāwī, quoted in “الأردن: ان رسالة الزرقاوي تؤكد على ارتباطه بالعملية الإرهابية”, *CNN Arabic* (1 May 2004), http://arabic.cnn.com/2004/middle_east/5/1/jordan.zarqawi/index.html (accessed 19 December 2007).

¹⁸⁶ Ibid.

¹⁸⁷ Multinational Force Iraq, “Fallujah Update”, Presentation dated 26 November 2004, http://www.globalsecurity.org/wmd/library/report/2004/fallujah-cw_cplic_26nov2004.ppt (accessed 19 December 2007).

so-called 'dirty' bombs...”¹⁸⁸ While it is a rare example of an operational al-Qaeda commander openly calling for experts within non-conventional weapons to join the battlefield,¹⁸⁹ it remains unknown whether anyone followed his call.

*The wave of Chlorine attacks in 2007*¹⁹⁰

In January 2007, it was reported that Iraqi insurgents had started to combine truck-bombs with chlorine canisters.¹⁹¹ The first attack occurred on January 28 in Ramadi, in which 16 people were killed by the explosion, but no one was reported to have been killed or hospitalized due to exposure to poisonous gas. In later attacks, however, it was reported that up to hundreds of victims were treated for symptoms resulting from chlorine-gas exposure. A few have also been reported killed due to chlorine-gas exposure, but there are no firm data to confirm this. It appears that in most cases the fatalities are caused by the conventional explosion, while the chlorine gas may have led to additional casualties, panic and fear. As of June 2007, around 11 such attacks had taken place, although it is not clear whether chlorine was used in all these attacks. One of the largest attacks occurred in Fallujah on 16 March 2006, in which tens of victims showed symptoms of chlorine gas exposure. The attacks were strongly condemned by the Association of Muslim Scholars in Iraq, that stated in a communique that the attacks were “... neither moral, nor human, nor legal according to Islamic law”.¹⁹² After June, the chlorine attacks apparently stopped.

Spokesmen for both the US and Iraqi authorities have repeatedly blamed these attacks on al-Qaeda’s local branch in Iraq, which since October 2006 has been a member of the Islamic State of Iraq (ISOI), an umbrella organization for several Sunni insurgent groups. The ISOI itself, however, has not admitted to having used chlorine in any of its attacks. In a communique issued on March 22, the ISOI denied “targeting common people with poisonous gas”, and here the ISOI was probably referring to the chlorine attacks in Fallujah and Ramadi

¹⁸⁸ Abū Ḥamza al-Muhājir, “تعالوا إلى كلمةٍ سواء”، transcript posted on Muntadayāt mājida (29 September 2006), <http://majdah.maktoob.com/vb/showthread.php?t=36129> (accessed 20 May 2007).

¹⁸⁹ Wesley, “Al-Muhajir calls for nuclear scientists to join the Mujahideen in Iraq”.

¹⁹⁰ This event was included in the analysis due to its significance, although it occurred after 2006.

¹⁹¹ See for example, “Chlorine as a Terrorist weapon in Iraq”, *WMD Insights* (May 2007),

http://www.wmdinsights.com/I15/I15_ME1_Chlorine.htm (accessed 19 December 2007).

¹⁹² “مبيان رقم 384 المتعلق باستعمال غاز الكلور في تفجير صهريجين في الفلوجة” (Communique no. 384 regarding the use of chlorine gas in two truck explosions in Fallujah), *Association of Muslim Scholars in Iraq*, 17 March 2007.

<http://www.iraq-amsi.org/news.php?action=view&id=14592&cd039081d61be6c44e3f42d336c1c4ac> (accessed 19 December 2007).

on March 16, and claimed that “...these lies are a part of the continuous information campaign to tarnish the jihad of the Islamic State.”¹⁹³

One possible explanation can be found by looking at the current situation in Iraq, and the fact that the chlorine gas has affected mostly Iraqi civilians. This is at present a sensitive subject for the ISOI, because over recent months there seems to have been disputes between the ISOI and other Sunni insurgent groups, and between the ISOI and local Sunni tribes in the Anbar province, where most of the attacks have taken place. The ISOI has been accused of killing members of other Sunni insurgent groups, and is also resisted by local tribal leaders, who accuse the ISOI of targeting civilians. Some of these tribes, therefore, have aligned with the Iraqi government in order to rid the region of al-Qaeda members. In return, the ISOI has carried out several attacks against local tribal leaders, whom they consider traitors. Perhaps the ISOI has not taken responsibility for the chlorine-bomb attacks because it knows it would certainly be used in propaganda against it to decrease local support for the foreign fighters.

Some of the chlorine bombs were used in combination with other weapons, such as mortars and handguns. At least two of the attacks also involved multiple truck-bombs. It is therefore unlikely that a small group was behind the attacks, such as a small, breakaway faction or individuals who act on their own. The complexity of some of the attacks points to a larger, organized group which is capable of carrying out coordinated attacks. The fact that the attacks have taken place in several regions also point to the possibility that they have been carried out by various actors who were perhaps inspired by each other's tactics.

5.2.2 The CBRN interest of al-Qaeda affiliates in Iraq

While the “al-Abud Network” allegedly recruited chemists and attempted to manufacture warfare agents such as tabun and nitrogen mustard, the CBRN efforts of other Sunni insurgents (al-Qaeda affiliates included) appear to have relied on the use of crude chemical agents (hydrogen cyanide and chlorine). I interpret this as an attempt to cause additional disruption and chaos, using whatever materials that were at hand, but not an attempt to develop a CBRN capability to *replace* conventional tactics such as explosives, sniper attacks and ambushes.

Al-Qaeda affiliates operate in a local setting, and in Muslim countries. This makes indiscriminate targeting more problematic, both because it kills civilian Muslims (which is

¹⁹³ Islamic State of Iraq, “إيضاح حول الأحداث الأخيرة في عامرية الفلوجة” (Explanation about the late incidents in ‘āmiriyyat al-Falūja), 22 March 2007. Posted on *Lahẓat al-‘Arabiyya*, 23 March 2007, <http://lahdah.com/vb/showthread.php?t=48100> (accessed December 2007).

presumably more controversial than killing non-Muslims), but also because it might provoke the local population to actively resist the group (this was the case, for example, in the Anbar province in Iraq in 2007). However, this has not prevented insurgent groups in Iraq killing thousands of civilian Muslims with conventional bombs. As the quote by al-Zarqāwī illustrates, killing civilians with conventional bombs appears to be less controversial than killing with CBRN materials. But is this only due to the potential number of victims? I would argue that this is not necessarily the only reason, because while it is true in the case of the ‘catastrophic’ use of CBRN weapons, it does not explain why there has not been more ‘tactical’ utilization of CBRN materials. In my opinion, this is due to the groups’ fear that this will be used in propaganda against them. The case of Iraq is interesting because it is an environment where several groups ‘compete’ to reach similar goals. This would theoretically increase the need to innovate. The case of Iraq shows, however, that competition can also decrease innovation, at least as far as ‘controversial’ tactics are concerned (such as the use of CBRN materials), out of a fear that this will be used by rivals in propaganda to make the group lose support.

The use of chlorine in vehicle bombs in Iraq appeared to have stopped by the summer of 2007. The direct reason for this appears to have been specific US countermeasures, such as restricting the import of chlorine to Iraq, and arresting bomb-making cells (the manufacturing of Improvised Explosive Devices in Iraq appears to be monopolized by a few parties). Another reason why the chlorine bombs stopped might have been that insurgents found the tactic an ineffective way of reaching their goals, for the various reasons mentioned above.

It should be stressed that the example of Iraq is probably not very representative of the ‘network’ level as a whole. On the other hand, the case study of Iraq revealed a number of interesting points, such as the dilemmas regarding the use of CBRN weapons within a local arena. While a competitive jihadi environment might promote innovation on the part of each group, it may also prevent innovation within certain tactics that can be exploited in enemy propaganda. It appears that CBRN may easily be regarded as such a tactic, especially due to the danger of hitting innocent Muslims. CBRN will not necessarily kill more civilians than a conventional bomb, but it appears to be easier to use in propaganda against rival groups.

5.3 *Al-Qaeda locals*

In this subchapter, I have examined four cases to illustrate the CBRN interest of al-Qaeda locals. I have only included cases in which suspects were put on trial, because they are

generally better documented than other cases. The cases include both individuals who received instructions from al-Qaeda's central leadership, as well as more 'home-grown' initiatives.

5.3.1 Jose Padilla

In May 2002, Jose Padilla, a US citizen of Puerto Rican extraction, was arrested at the O'Hare International Airport in Chicago, and was accused of planning to carry out a "dirty bomb" attack within the United States. He was designated an enemy combatant by the President and spent the next three and a half years in military prisons. According to the interrogations of Padilla and other detainees, Padilla had apparently proposed such an operation to senior al-Qaeda operatives in early 2002, but the plan had been rejected. Instead, Padilla had been tasked with blowing up several high-rise apartment buildings with natural-gas heating, and received training and financing for this purpose.¹⁹⁴

In November 2005, however, he was indicted and transferred to the civilian court system. The indictment does not mention the dirty bomb plot, nor any other plans to carry out attacks on US soil. Instead, he is accused of belonging to a North American support cell that conspired to "murder, kidnap, and maim persons in a foreign country" and to "provide material support for terrorists."¹⁹⁵ The trial was scheduled to start in May 2007 and is estimated to last four months.¹⁹⁶ Although Padilla is not formally charged with planning to carry out acts of CBRN terrorism against the US, the documents released in the case nevertheless reveal interesting details with regards to al-Qaeda's CBRN intentions.

Jose Padilla was a gang-member and petty criminal before converting to Islam sometime in the 1990s.¹⁹⁷ He appears to have been recruited for jihad by a North American cell led by Kifah Wael Jayyousi.¹⁹⁸ According to Padilla's own testimony, he became interested in going to Afghanistan after meeting a "Recruiter" on his hajj pilgrimage to Mecca in March 2000. He completed "basic training" at al-Qaeda's al-Farouq training camp in Afghanistan in September-October 2000, and was approached several times by Muḥammad 'Āṭif, al-Qaeda's military commander, apparently because of his US citizenship. In July or August 2001 he was

¹⁹⁴ "Summary of Jose Padilla's activities with Al Qaeda", *Department of Justice*, 1 June 2004, 3-5. Available: <http://www.fas.org/irp/news/2004/06/padilla060104.pdf> (accessed 29 June 2007).

¹⁹⁵ "United States of America v. Adham Amin Hassoun et al. Defendants", United States District Court Southern District of Florida, 17 November 2005, 4, 17. Available: <http://www.wiggin.com/db30/cgi-bin/pubs/11-17-05%20Indictment.pdf> (accessed 2 July 2007).

¹⁹⁶ Warren Richey, "A first look at US case against Padilla", *The Christian Science Monitor*, 14 May 2007, <http://www.csmonitor.com/2007/0514/p01s02-usju.html> (accessed 29 June 2007).

¹⁹⁷ "Profile: Jose Padilla", *BBC News*, <http://news.bbc.co.uk/2/hi/americas/2037444.stm> (accessed 2 July 2007).

¹⁹⁸ "United States of America v. Adham Amin Hassoun et al. Defendants".

tasked by 'Āṭif with a terrorist operation on US soil that involved blowing up apartment buildings with natural-gas heating. He and another operative received explosives training for this purpose, but apparently the mission was abandoned because Padilla and the other operative could not get along. After Muḥammad 'Āṭif was killed in November 2001, Padilla fled with several other al-Qaeda operatives to Pakistan. In Faisalabad, Padilla states, “he and his accomplice approached Abu Zubaydah with an operation in which they would travel to the United States to detonate a nuclear bomb they learned to make on the Internet”.¹⁹⁹ Abu Zubaydah thought the idea unfeasible, but that “explosives wrapped in uranium (i.e. a “dirty bomb”)” might be more realistic. He was still sceptical, however, and warned Padilla that it was more difficult than he thought. Padilla, on the other hand, was convinced he was able to carry it out. Abu Zubaydah then sent them to Khalid Sheikh Muhammad to present the plan, while at the same time advising Khalid Sheikh Muhammad that “he did not think it practical.”²⁰⁰ Padilla and the accomplice met with Khalid Sheikh Muhammad in March 2002. The plan was apparently to obtain radioactive material inside the US rather than smuggling it. Apart from this, it is unclear how developed the plot was at this point. In any case Khalid Sheikh Muhammad rejected the plan, suggesting instead that they undertake the original mission of blowing up apartment buildings with natural-gas heating. According to Padilla, Muhammad found the dirty bomb plan “a little too complicated.”²⁰¹ Padilla’s account is largely confirmed by other al-Qaeda-detainees, although with some inconsistencies regarding the target.

If the accounts are true, it reveals some interesting points. The alleged plot to use nuclear or radiological materials was not initiated by al-Qaeda central, but by a loosely affiliated operative (Padilla) who appears to be no skilled nuclear scientist, but who relied on information on the Internet. Al-Qaeda central, who apparently did not judge him capable of such a complex mission, chose instead to send him to attack a number of easily obtainable “soft targets” (regular apartment buildings). This indicates a willingness by al-Qaeda central to select low-profile targets and tactics if high-profile targets are not regarded as feasible.

5.3.2 The Courneuve-Romainville group (“The Chechen Network”)

In December 2002, a group of North Africans were arrested in the Paris suburbs, as they were suspected of planning to carry out terrorist attacks in Europe. They were primarily based in

¹⁹⁹ “Summary of Jose Padilla’s activities with Al Qaeda”.

²⁰⁰ Ibid., 4.

²⁰¹ Ibid., 5.

the Courneuve-Romainville suburbs of Paris, hence French authorities have usually referred to them as the Courneuve-Romainville group. In media reports they have usually been dubbed “the Chechen Network”, because they were believed to have received training with militants in the Caucasus. Most of the group’s members were of Algerian origin, and some of them had previous experience from militant groups in Algeria. During the summer of 2001, several of the group’s members had travelled to Georgia in an attempt to join the Chechen rebels, apparently without success, and most of them returned to France a few months later. At the time of their arrest, the group had allegedly planned to attack the Russian Embassy in Paris, as revenge for Chechen militants killed in the Dubrovka theatre in October 2002, but other targets in Paris had also been discussed.²⁰²

In addition, however, it was widely believed that the group had ties to al-Qaeda, and that they intended to carry out chemical and biological attacks across Europe. The claim is largely based on interrogations of Abu Zubaydah, who was captured in Pakistan in April 2002. According to the CIA, Abu Zubaydah had revealed during interrogations that a man named Abu Atiya, an associate of Abū Muṣ‘ab al-Zarqāwī who was operating out of a remote area of the Caucasus, had dispatched nine North African men to Europe to prepare chemical and biological attacks in 2001. The information was allegedly passed on to the French authorities, and was said to have contributed to the arrests in the Paris suburbs in December 2002. Three of the arrested suspects had been named by Abu Zubaydah.²⁰³ This information was also used by Colin Powell in February 2003 to convince the UN Security Council that Abū Muṣ‘ab al-Zarqāwī, who was based in Northern Iraq at the time, intended to carry out chemical attacks in Europe.²⁰⁴

Although uncorroborated by other open sources, Abu Zubaydah’s story seems to correspond to the activities of the Courneuve-Romainville group, who left Georgia during the autumn-winter of 2001 after spending several months with militants in the Pankisi Gorge. Mérouane Benahmed, the leader of the group, was reportedly in contact with Abu Atiya during this stay. During 2000 or 2001, Abu Atiya was said to have met both Abū Muṣ‘ab al-Zarqāwī and Abu Zubaydah, and he had specifically told Abu Zubaydah about “the situation of Arab

²⁰² “Tribunal De Grande Instance De Paris Contre Marbah, Lebik, Benahmed Et Autres, Jugement Du: 14 Juin 2006”.

²⁰³ David S. Cloud, “Long in U.S. sights, a young terrorist builds grim résumé on journey to Iraq, Zarqawi forged ties with al Qaeda, attracted own followers; An amputation in Baghdad” *The Wall Street Journal*, 10 February 2004, <http://www.ajiac.org.au/updates/Feb-04/120204.html> (accessed 4 July 2007).

²⁰⁴ “U.S. Secretary of State Colin Powell addresses the U.N. Security Council”, 5 February 2003, *The White House*, <http://www.whitehouse.gov/news/releases/2003/02/20030205-1.html> (accessed 4 July 2007).

combatants in Georgia and Chechnya.”²⁰⁵ Abu Atiya, who was arrested in Baku in March 2003, admitted that he was responsible for all foreigners wanting to fight in Chechnya, and that he during this period in 2001 had requested they go back home, advising them that jihad could be fought outside Chechnya and Afghanistan as well. He does not mention anything about giving the Algerians specific instructions to carry out attacks, and it is therefore unclear whether the cell was part of a larger command structure, or operating on its own.²⁰⁶ After a second wave of arrests in the case in January 2004, however, French officials claimed to have obtained more evidence in the case. They confirmed that one of the group’s members, Menad Benchellali, had attended an al-Qaeda poisons course in Afghanistan, and that there was further evidence that the cell “... was trying to manufacture chemical and biological weapons for attacks around Europe.”²⁰⁷ Several of Benchellali’s family members had testified that Benchellali had been conducting “chemical experiments” in his mother’s sewing room, the products of which were filled in small bottles and given to another cell member.²⁰⁸ Furthermore, Benchellali had told several of the group’s members that he wanted to carry out chemical or biological attacks.²⁰⁹ In March 2006 the case was finally brought to the court. On 14 June 2006, 24 out of 27 defendants were found guilty of “participation in a criminal association, with the purpose of preparing an act of terrorism”, and received jail sentences of up to ten years. One was found guilty of document fraud, while two were acquitted. Benahmed, the leader, and Benchellali, the “chemist”, both received ten years. Although the case reveals that members of the group had ties with other militant Islamists in Spain, Great Britain, Germany and elsewhere, there is very little concrete evidence that an al-Qaeda- or al-Zarqāwī -organized “poison conspiracy” was in the making. No poisonous substances were confiscated in the case, although an unused NBC (nuclear, biological, chemical)-protection suit was found in one of the group’s apartments. In addition, the police found a variety of electronic equipment, equipment to make false documents, and some usual bomb-making chemicals. But what was the nature of the Courneuve-Romainville group’s CBRN efforts?

According to the verdict, the group’s alleged chemical expert, Menad Benchellali, was born in France and had dual French/Algerian citizenship. He went to vocational school in France and

²⁰⁵ “Tribunal De Grande Instance De Paris Contre Marbah, Lebik, Benahmed Et Autres, Jugement Du: 14 Juin 2006”, 94, 102.

²⁰⁶ Cloud, “Long in U.S. sights”.

²⁰⁷ Quoted in Jon Henley, “Al-Qaeda terror plot foiled, say French police”, *The Guardian*, 12 January 2004, <http://www.guardian.co.uk/alqaida/story/0,12469,1120823,00.html> (accessed 3 July 2007).

²⁰⁸ Ibid.

²⁰⁹ See for example, “Tribunal De Grande Instance De Paris Contre Marbah, Lebik, Benahmed Et Autres, Jugement Du: 14 Juin 2006”, 90.

obtained a certificate in electronics in 1991. He made several trips in Europe and the Middle East, and from 1998 he lived for a period in London where he frequented radical mosques. Apparently, he went to Afghanistan around 1999, assisted by the Abu Doha (Amar Makhoulif) network, and stayed there for about a year. According to his brothers, he was very proud of his training when he came back, and he told them that he attended various courses at “the Algerian house” in Jalalabad, including a course on how to make ricin poison. His brother Hafed also remembered him talking about “testing on rabbits”.²¹⁰ Initially, his expressed goal was to fight a jihad in Chechnya. He departed for Georgia on June 2001, and returned in December the same year, staying with a jihadi group in the border area but never participating in combat. According to his own account, he only got to do physical training and practice-shooting Kalashnikovs during his stay. Upon his return, he started conducting chemical experiments in his mother’s sewing room. According to another cell member, Mourad Merabet, Benchellali had returned from Chechnya “loaded with hate”, and had stated that he wanted to produce “chemical and biological arms in order to mount attacks in Europe”, in particular against Russian interests. Benchellali had also told him that he and some others had rented an apartment outside Paris in order to start up preparations. Furthermore, he had kept some toxic formulae on his laptop, which Mourad Merabet admitted to having deleted at Benchellali’s order, after the first arrests occurred in the case. Hafed Benchellali described his brother Menad as having “gone completely mad” after taking the poison course in Afghanistan.²¹¹

It is unclear, at least according to open sources, whether the cell was acting independently, or as part of a larger “poison conspiracy”. There were several indications that they were preparing improvised explosives, and that they planned attacks in Paris. The alleged plan to carry out biological or chemical attacks, however, seems to have been only at the idea stage. Notably, there was no concrete evidence that the cell had been able to produce any biological or chemical agents at the time of their arrest, or even obtained the necessary materials, except for an NBC-protection suit. The desire to carry out biological and chemical attacks in Europe was mostly voiced by one member, Benchellali, who apparently was inspired by the poisons course he had attended in Afghanistan. As he had no formal education in natural sciences, let alone advanced biochemical engineering, he clearly underestimated the technical challenges of producing effective chemical or biological weapons. This belief, combined with his

²¹⁰ “Tribunal De Grande Instance De Paris Contre Marbah, Lebik, Benahmed Et Autres, Jugement Du: 14 Juin 2006”, 135, 136.

²¹¹ Ibid., 140, 142.

expressed hatred against the West, is perhaps a sufficient explanation why he embarked upon his mysterious experiments, and it explains why they apparently failed.

5.3.3 Kamal Bourgass and the “ricin plot”

On 5 January 2003, police raided an apartment in Wood Green, North London, and arrested several Algerians suspected of being part of a terrorist cell and for planning to carry out chemical attacks in Great Britain. The tip allegedly came from the Algerian secret service which had arrested an Algerian Islamist, Mohammed Meguerba, in December 2002. Meguerba had said during interrogations that the cell had “an amount of poison they are prepared to use”, and that the poison was hidden in two jars of Nivea cream.²¹² During a search of the Wood Green apartment, the police found, among other things, a locked bag containing £4,100 in cash, several hand-written formulations (in Arabic) about poisons and explosives manufacturing, various plastic bottles with chemicals “which could have formed the ingredients for the manufacture of ricin and cyanide”, as well as other items, including a pestle and mortar with a white, powdery material on it that was initially said to contain traces of ricin.²¹³ Some 20 castor beans had also been found in the apartment.²¹⁴ Subsequently, the case was given wide media coverage and the group was dubbed a “ricin ring” with ties to al-Qaeda. Later it was revealed that the ricin test had been a false positive, and that in fact, no ricin had been found, either in the Wood Green apartment or anywhere else.²¹⁵ There were clear indications, however, that the cell had intentions of manufacturing poisons for unlawful purposes. On 13 April 2005, the alleged leader of the cell, Kamal Bourgass, was sentenced to 17 years in prison for having “conspired together with other persons unknown to commit public nuisance by the use of poisons and/or explosives to cause disruption, fear or injury”.²¹⁶ However, there was not enough evidence to charge him with a “conspiracy to commit acts of Islamist terrorism by killing innocent civilians,” the most serious charge against him. Bourgass was already serving a life-sentence for killing a policeman during his arrest. The other four defendants in the case, all Algerians, were acquitted of all charges, while charges

²¹² Jason Burke, quoted in “Revealed: how secret papers led to ricin raid”, *The Observer*, 17 April 2005, http://observer.guardian.co.uk/uk_news/story/0,6903,1461715,00.html (accessed 5 July 2007).

²¹³ “R v Bourgass”, England and Wales Court of Appeal, Judgment of 19 July 2005, via British and Irish Legal Information Institute (BAILII), <http://www.bailii.org/ew/cases/EWCA/Crim/2005/1943.html> (accessed 5 July 2007).

²¹⁴ “The deadly recipes”, *BBC News*, 13 April 2005, <http://news.bbc.co.uk/1/hi/uk/4433679.stm> (accessed 5 July 2007).

²¹⁵ See for example, Walter Pincus, “London Ricin Finding Called a False Positive”, *Washington Post*, 14 April 2005, <http://www.washingtonpost.com/wp-dyn/articles/A49564-2005Apr13.html> (accessed 5 July 2007).

²¹⁶ “Key figures in ricin case”, *BBC News*, 13 April 2005, http://news.bbc.co.uk/2/hi/uk_news/4433649.stm (accessed 4 July 2007).

were dropped against three Algerians and a Libyan.²¹⁷ Thus, in spite of numerous allegations, there was not enough evidence to link the “ricin cell” to militant Islamist networks. What was the nature, then, of the so-called ricin plot?

Kamal Bourgass, born 1973, is an Algerian refugee who applied for asylum in the United Kingdom on 31 January 2000 using the name Nadir Habra. The application was refused, and his appeal was finally dismissed on 11 December 2001. After this he seems to have changed his name to Kamal Bourgass and continued living in the UK clandestinely. In July 2002, he was allegedly arrested in East London for shoplifting three pairs of jeans, and spent one night in jail.²¹⁸ He was wanted by the police on 6 January 2003, after several passport photos of him had been discovered along with the ‘ricin equipment’ found in the Wood Green apartment. He was arrested in Manchester a few days later, and during this arrest, he killed one policeman and wounded several others with a kitchen knife. His fingerprints were found on the ‘ricin equipment’, and handwriting analysis showed that he was the author of the handwritten formulae. The fingerprints of others arrested in the case were also found on the seized material.²¹⁹ Bourgass changed his explanations about the bag several times, but during the trial he tried to blame Mohammed Meguerba, stating that it was Meguerba’s equipment and that he had only copied the notes on his behalf.²²⁰ There is little open-source information available on Bourgass’ alleged links with militant islamists and al-Qaeda. During his trials, Bourgass did not stand out as a hardcore jihadi or al-Qaeda professional. Regarding the killing of a British policeman during his arrest, for example, he stated that it had not been his intention, that he sincerely regretted it and that he was “extremely sorry.”²²¹ It seems he had several acquaintances in radical Islamist circles in London, and he used the infamous Finsbury Park mosque as his mail address. It is unclear, however, whether he had ever been to a training camp in Afghanistan. The only person to confirm this, at least according to open sources, was Mohammed Meguerba, who told Algerian authorities that he and Bourgass had been to training camps in Afghanistan. Later he withdrew the confession, claiming that it had been extracted under torture. Meguerba’s statements, therefore, were not used as evidence against Bourgass.

²¹⁷ A. Cowell, “Just one of 9 suspects convicted in 2003 British poison plot case,” *New York Times*, 14 April 2005.

²¹⁸ John Steele and Sue Clough, “From the Taliban camps to the poison factory over a north London chemist’s”, *Telegraph*, 4 April 2005, <http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2005/04/14/nbour314.xml> (accessed 5 July 2007).

²¹⁹ “R v Bourgass”.

²²⁰ Ibid; and “Key figures in ricin case”.

²²¹ “R v Bourgass”.

Jason Burke, who has analyzed the Algerian interrogation reports, argues that Meguerba provided so many details from the training in Afghanistan that it was reasonable to believe that he had actually been there himself. According to information obtained by Burke, Meguerba left Algeria in 1995 and travelled around Europe before settling in Ireland, where he came into contact with radical Islamists in 2000. Then, activists in London sent him to training camps in Afghanistan. Back in London, he allegedly started practising the manufacturing of poison, “as he had been shown in the Afghan camps.”²²² The poison formulations presented as evidence in the case were, in fact, similar to those found in Afghanistan, but they could also have been copied from open sources.²²³ In September 2002, Meguerba was arrested for carrying false documents, then he jumped bail and fled to Algeria, where he was arrested in December the same year. He told the interrogators about the ricin conspiracy and the Wood Green flat, and that it was “occupied by an Algerian affiliated by al-Qaeda”, apparently referring to Bourgass. He also said that Bourgass had planned to smear ricin on door handles, also a method well-known from al-Qaeda training manuals.²²⁴ Even if Bourgass had managed to produce ricin, this delivery method would most likely not work due to the large size of the ricin molecules that renders it incapable of penetrating the skin. The plot, therefore, seemed very amateurish.

The significance of the London “ricin cell” was probably exaggerated due to the upcoming war on Iraq. The alleged discovery of ricin in London was heavily used by the US administration to prove that there were connections between Iraq, al-Zarqāwī and a European poison conspiracy (it was not until long after the Iraqi invasion that it became publicly known that no ricin had been found in the Wood Green apartment).²²⁵ The urgent need to justify the US-led invasion of Iraq probably led to overhasty conclusions with regards to the nature of the London plot.

²²² Quoted in “Revealed: how secret papers led to ricin raid”.

²²³ Copies of the translated recipes were accessed in George Smith, “Playtime recipes for poisons: The Bourgass notes of mass exaggeration”, *National Security Notes*, 18 April 2005, <http://www.globalsecurity.org/org/nsn/nsn-050418.htm> (accessed 5 July 2007).

²²⁴ Quoted in “Revealed: how secret papers led to ricin raid”.

²²⁵ For example, in his address to the UN Security Council in February 2003, US Secretary of State Colin Powell referred to a UK “poison cell” that had links to the Chechen network and Abū Muṣ‘ab al-Zarqāwī. See “London Ricin Finding Called a False Positive”, *Washington Post*, 14 April 2005, <http://www.washingtonpost.com/wp-dyn/articles/A49564-2005Apr13.html> (accessed 5 July 2007); and “U.S. Secretary of State Colin Powell addresses the U.N. Security Council”, 5 February 2003, *The White House*, <http://www.whitehouse.gov/news/releases/2003/02/20030205-1.html> (accessed 4 July 2007).

It has also been alleged that the London and the Paris cases were connected, and that the London “ricin cell” was in fact part of the “Chechen network”.²²⁶ There is little evidence to support this claim, even though it cannot be totally disregarded. It appears that individuals affiliated with the Courneuve-Romainville group had met or knew affiliates of the circle around Bourgass,²²⁷ but it is unclear whether they were cooperating in the field of terrorism, or whether they were simply acquaintances because they both belonged to the same exile community of Algerian Islamists living in Europe.

In any case, there are many principal similarities between these two cases. The idea to make poison was driven by individuals with no scientific training, but who were clearly inspired by crude poison-making methods that are well-known from American paramilitary literature. Such methods have also been taught on jihadi “poison courses” in Afghanistan and elsewhere, and it is likely that both Benchellali and Meguerba could have attended such courses in 1999-2000, sponsored by a European Islamist network based in London. If they did attend a poisons course in Afghanistan, they were probably encouraged by the instructors to use their knowledge for jihad, but the plots themselves, the way they turned out, carried very few hallmarks of an al-Qaeda organized conspiracy.

5.3.4 Dhiren Barot

The Dhiren Barot case is probably the most serious CBRN incident related to militant Islamists in the West. On 3 August 2004, British police arrested the 34-year old UK citizen Dhiren Barot and several others, and charged them with “conspiracy to commit a public nuisance by using radioactive material, toxic gas, chemicals or explosives,” as well as conspiracy to commit murder. On 12 April 2005, Barot and two others were also indicted by a US court for “conspiracy to use weapons of mass destruction against persons within the United States”, as well as conspiracy to aid terrorists and to damage commercial buildings.²²⁸ At the time of his arrest, Barot had been working on his plans for more than four years. In 2000 and 2001, he and an accomplice went to the US to conduct surveillance of potential targets, such as the World Bank headquarters in Washington and the New York Stock Exchange, and he also carried out extensive research based on open sources. He wrote very

²²⁶ Araminta Wordsworth, “‘Chechen network’ behind poison plot: Algerian roots: Investigators uncover an international web worth of a spy novel”, *National Post*, 10 January 2003, A13.

²²⁷ “Tribunal De Grande Instance De Paris Contre Marbah, Lebig, Benahmed Et Autres, Jugement Du: 14 Juin 2006”.

²²⁸ “United States of America v. Dhiren Barot, Nadeem Tarmohamed and Qaisar Shaffi”, United States District Court Southern District of New York, <http://www.washingtonpost.com/wp-srv/articles/hindi.pdf> (accessed 6 July 2007).

detailed plans of attacks both in the US and the UK, which were later found on various computers. The plans included a series of co-ordinated attacks inside the UK, including plans to detonate a dirty bomb.²²⁹ The cell was found with a large cache of smoke detectors containing small amounts of americium-241. Most officials believe it is unlikely that the amount was sufficient to cause casualties or radiation sickness, but “it would be sufficient to trigger sensors in enclosed places.” In November 2006, Barot was sentenced to life imprisonment by the British court. In June 2007, seven co-conspirators received jail sentences between 15-26 years for playing supporting roles in the plot.²³⁰

Dhiren Barot (aka Abū ‘Iṣṣa al-Hindī, ‘Iṣṣa al-Briṭānī), born 1971, is a British citizen with an Indian mother and Kenyan father and grew up in North London. He is described as an “average student” who converted to Islam in his early twenties and started attending radical mosques in London.²³¹ He went to Kashmir in 1995 and fought with jihadi groups there, and later wrote a book about it called *The Army of Madinah in Kashmir*, published in 1999.²³² Around 1998 he went to Afghanistan and worked for one year as an instructor at the jihadi camps. Afterwards he moved to the Philippines, where he allegedly received further training in “firearms, munitions and explosives handling”.²³³ In March 2007, Khalid Sheikh Muhammad admitted responsibility for “surveying and financing for the destruction of the New York Stock Exchange and other financial targets after 9/11”,²³⁴ possibly referring to Barot’s surveillance trips conducted in August 2000 and March 2001. It seems that after 9/11, Barot concentrated his plans on attacking targets within Britain. He allegedly presented his final plans to senior al-Qaeda commanders in Pakistan in February-March 2004, before returning to Britain on 21 April.²³⁵

²²⁹ Ibid; Rosie Cowan, “Buried inside a Bruce Willis video, the evidence of a plot to kill thousands”, *Guardian Unlimited*, 7 November 2006, <http://www.guardian.co.uk/terrorism/story/0,,1941187,00.html> (accessed 8 July 2007); and “Terrorist jailed for life for conspiracy to murder in the UK and US”, *Metropolitan Police*, 7 November 2006, http://cms.met.police.uk/news/convictions/terrorism/terrorist_jailed_for_life_for_conspiracy_to_murder_in_the_uk_and_us (accessed 6 July 2007).

²³⁰ “UK al-Qaeda cell members jailed”, *BBC News* 15 June 2007, http://news.bbc.co.uk/2/hi/uk_news/6755797.stm (accessed 20 June 2007).

²³¹ Duncan Gardham, “Average student who met 9/11 mastermind”, *Telegraph*, 17 June 2007, <http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2007/06/15/nbomb315.xml> (accessed 8 July 2007).

²³² ‘Esa al-Hindi, *The army of Madinah in Kashmir* (Birmingham: Maktabah Al Ansaar, 1999). Available: <http://www.streetdawah.com/books/Kashmir.pdf> (accessed 8 July 2007).

²³³ Gardham, “Average student who met 9/11 mastermind”; “United States of America v. Dhiren Barot, Nadeem Tarmohamed and Qaisar Shaffi”.

²³⁴ “Verbatim Transcript of Combatant Status Review Tribunal Hearing for ISN 10024 [Khalid Sheikh Muhammad]”, 18.

²³⁵ Gardham, “Average student who met 9/11 mastermind”. According to an article in *The Washington Post*, Barot’s “Rough presentation for gas limos project” was also found on “an al-Qaeda laptop computer in Pakistan” in 2004. Craig Whitlock, “Homemade, cheap and dangerous”, *Washington Post*, 5 July 2007 A01,

Barot had made a detailed project proposal, which was summarized in a 39-page document released by the Metropolitan Police.²³⁶ The core of his plan was the so-called “Gas Limos Project”, which consisted of blowing up limousines filled with explosives and gas canisters in several underground car parks. In addition he discusses radiological dispersal devices (RDD), various types of train attacks and attacks using hijacked petrol tankers.²³⁷ The documents reveal that Barot had conducted considerable research into RDDs and drew from open sources. In particular, he had copied and pasted sections from a report published by the Center for Nonproliferation Studies in 2003, in which the dangers of commercially available radioactive sources were discussed.²³⁸ When discussing what radioactive material would be most suitable, he emphasizes that ease of access is more important than the strength of the hazard. Americium-241, which can be found in small amounts in smoke detectors, is therefore a more attractive choice than for example the powerful radioactive sources found in hospitals, as “security is tight in these places”. He notes that an RDD “... does not need to cause casualties to be effective” as long as it causes disruption and panic, and requires a costly clean-up.²³⁹ After discussing the pros and cons of various alternatives, he proposes a plan to collect 10,000 commercially available smoke detectors, and then disperse the radioactive material by fire, rather than explosives, as he argues that the radiological pollution will be less effective if dispersed over a large area. The accumulation of smoke detectors was estimated to take ten months using ten operatives, and the whole project would require at least £70,000, according to Barot’s calculations. It seems that his plans were formulated to be presented to a higher level for approval and funding.

His “keep-it-simple” philosophy was not restricted to the manufacture of CBRN weapons. In his project proposal, he states that the whole project is based on the method of “...mak[ing] use of that which is available at your disposal and to bend it to suit your needs, (improvise) rather than wasting valuable time becoming despondent over that which is not within your reach”, an idea he claims to have learnt from “observing senior planners.”²⁴⁰

<http://www.washingtonpost.com/wp-dyn/content/article/2007/07/04/AR2007070401814.html> (accessed 28 November 2007).

²³⁶ Dhiren Barot, “Rough presentation for Gas Limos Project”, 1. *Metropolitan Police Homepage*, <http://www.met.police.uk/pressbureau/rhyme/>.

²³⁷ Barot, “Rough presentation for Gas Limos Project”, 32; “Final Presentation”, 12.

²³⁸ Charles D. Ferguson, Tahseen Kazi, and Judith Perera, “Commercial Radioactive Sources: Surveying the Security”, Center for Nonproliferation Studies, January 2003, <http://cns.miis.edu/pubs/opapers/op11/> (accessed 2 October 2007).

²³⁹ Barot, “Rough presentation for Gas Limos Project”, 34.

²⁴⁰ *Ibid.*, 30.

Dhiren Barot appears to have made the most comprehensive attempt to carry out a CBRN terrorist attack in the West. He did not regard the CBRN plan sufficient, however; the purpose of the ‘dirty bomb’ was to create fear and disruption in addition to the large numbers of casualties that his conventional bombs would create. He also suggested, in his “gas limos” project, to paint some of the gas cylinders in yellow colour in order to give the impression that they contained poisonous gas. This, he believes, “... will help spread terror and chaos when the emergency service (Hazmat) teams arrive”.²⁴¹

5.3.5 The CBRN interest of al-Qaeda locals

The CBRN attacks planned by al-Qaeda locals all relied on crude, readily available materials, and the planned ‘delivery methods’ were very unsophisticated. The Jose Padilla case shows that although the initial ambitions were high (a nuclear bomb), the actual plan was modified (gas explosion) to reflect the operative’s capabilities. This has also been the case in other al-Qaeda-related plots in Europe. There is a willingness to attack with crude weapons if high-tech weapons are not available; and there is a willingness to attack ‘soft’ targets (civilians) if ‘hard’ targets (for example, US military bases) are too well protected.²⁴²

The cases also show that the al-Qaeda locals acquired their CBRN knowledge either from open source-literature (clearest in the Barot case), or from crude poison courses taught in Afghanistan. However, several hundred people took part in these courses, but only a few decided to actually use the knowledge. This indicates, again, that the purpose of the course was not to ‘indoctrinate’ the trainees to start carrying out attacks with CBRN materials. The decision to use CBRN materials appears to have been made by the operatives themselves due to a personal preference for such tactics. In some cases they might have presented the plans to senior al-Qaeda members for approval and funding, in other cases not. The cases show that although al-Qaeda central has also displayed an interest in CBRN weapons, it seems that it has not yet initiated such a plot.

In order to judge the significance of the reviewed cases, they must be seen in relation to the other types of plots and attacks that have occurred in Europe and the United States during this period. Unfortunately, there is not enough space to go into detail here. It is worth mentioning, however, that out of 24 ‘substantially documented’ incidents that occurred in Europe between 1998-2007, only four involved possible use of CBRN agents. The count is based on a

²⁴¹ Barot, “Rough presentation for Gas Limos Project”, 26.

²⁴² Petter Nesser, “Jihadi Training in Europe”, *Terrorism and Political Violence* (2008, forthcoming).

chronology of Jihadism in Western Europe developed by Petter Nesser, and includes both planned, prepared and executed attacks.²⁴³ All four incidents, moreover, occurred between 2002-2004, meaning that there is no apparent increase in these types of incidents.²⁴⁴

Undoubtedly, the cases reviewed in this study should be seen as the exception rather than the rule.

5.4 Al-Qaeda sympathizers

The final ‘level’ of al-Qaeda I have looked at is al-Qaeda sympathizers. In my analysis, I have chosen to let this group be represented by al-Qaeda supporters who are active on the Internet through jihadist web pages and discussion forums. This subchapter will provide an overview of CBRN manuals and handbooks available on jihadist web pages, examine their technical quality, and explore CBRN-related postings and discussions, with a view to determining the nature of the CBRN efforts on this level of the al-Qaeda network.

5.4.1 Jihadism Online

It is well-known that the Internet today plays an important role for al-Qaeda and its loose network of affiliates and sympathizers. It serves both as a communication channel, a reference library and a virtual meeting place. This, of course, is due to obvious factors such as anonymity, ease of access, and nearly unlimited storage space.

Al-Qaeda uses the Internet today for a variety of purposes:

- For propaganda and indoctrination purposes.
- For specific communication purposes such as boosting the morale of members and sympathizers and “terrorizing” the enemy through graphic footage of damage and losses inflicted upon their enemies. Furthermore, the web is also a key media outlet for official communiqués, and to a lesser extent for outlining doctrines and strategies.
- For command-and-control purposes, including dispatching operative instructions as coded emails.
- For training purposes by distributing manuals and videos in small-arms training, explosives, poison, surveillance evasion, information gathering, reconnaissance, etc.

²⁴³ Petter Nesser, “Chronology of Jihadism in Western Europe 1994 – 2007; planned, prepared and executed terrorist attacks” (2008, *forthcoming*)

²⁴⁴ Ibid.

- For fund-raising and recruitment purposes.
- For waging “e-jihad” which is a term frequently used about information attacks on enemy websites by jihadi sympathizers, resulting in defacement, the theft of sensitive data, denial-of-service attacks etc.²⁴⁵

After the disappearance of the training camps in Afghanistan, it has become popular to view the Internet as al-Qaeda’s new ‘training camp’ or ‘virtual Afghanistan,’²⁴⁶ and this refers to the numerous training manuals and handbooks available online, including high-quality instruction videos. In addition, there are specialized sub-forums in which the members exchange information and experiences on a range of military and technical subjects such as bomb-making, secure communication, how to build a cell, and so on. While it seems obvious that a cyber environment could never replace a real-life situation, some jihadist publications have recognized the potential of Internet as a tool for training. Most notably, the online magazine *Mu’askar al-Baṭṭār* (*al-baṭṭār* means ‘sabre’ but is also the nickname of Yūsuf al-‘Ayīri, the leader of al-Qaeda on the Arabian Peninsula) stated in its first issue from January 2004:

In order to join the great training camps you don’t have to travel to other lands. Alone, in your home or with a group of your brothers, you too can begin to execute the training program. You can all join the *al-Baṭṭār* camp.²⁴⁷

The magazine was issued on a bi-monthly basis from January-October 2004, and contained ideological articles as well as practical lessons on elementary military skills.

The idea that anyone can start training at home based on material downloaded from the Internet is most clearly articulated by the al-Qaeda strategist Abū Muṣ‘ab al-Sūrī, who argues in *The Global Islamic Resistance Call* (*da’wat al-muqāwama al-islāmiyya al-‘ālamīyya*) that rather than calling Muslims to join training camps in other countries, such as Afghanistan, “[i]t is necessary to move the training to every house, every quarter and every village of the Muslim countries..”²⁴⁸ He explicitly calls for “the spread of a culture of preparation and training [...] by all methods, especially the Internet...”²⁴⁹ He also provides a rough outline of a training program, in which he recommends learning basic military skills from manuals “that are available today on the Internet”, while emphasizing that “explosives manufacture should

²⁴⁵ The list is based on Gabriel Weimann, *Terror on the Internet: The new arena, the new challenges* (Washington, D.C.: United States Institute of Peace Press, 2006).

²⁴⁶ See for example, Stephen Ulph, “A Guide to Jihad on the Web,” *Terrorism Focus* 2, no. 7. Available: <http://www.jamestown.org/terrorism/news/article.php?articleid=2369531> (accessed 28 February 2007).

²⁴⁷ *Mu’askar al-Baṭṭār* 1 (January 2004), downloaded via *al-Qā’idūn*, www.qa3edoon.com.

²⁴⁸ Abū Muṣ‘ab al-Sūrī, “دعوة المقاومة الإسلامية العالمية” (*The Global Islamic Resistance Call*), 1425.

²⁴⁹ *Ibid.*, 1424.

only be done under supervision of an experienced chemist”. Though he provides a list of recommended training manuals to read, CBRN manuals are not mentioned.²⁵⁰

As indicated above, training is only one of many ways that al-Qaeda uses the Internet, and the subject remains relatively small. In one of the largest discussion forums, *Muntadayāt al-firdaws al-jihādiyya*, which at the time of access contained some 19,000 threads, 750 threads (or 3.9 per cent) were posted in the sub-forum for equipment and preparation (*muntadā al-‘udda wal-īdād*). In comparison, 24 per cent of the threads were posted in the sub-forum for communiqués and reports (*muntadā al-bayānāt wal-taqārīr*). A survey of other forums showed a similar distribution.²⁵¹

That said, there is in any case a considerable amount of training material and manuals available online, as well as daily activity in discussions related to weapons and preparation. A well-known collection of training manuals is the Encyclopaedia of Preparation (*mawsū‘at al-īdād*), a 400-MB collection of training handbooks divided into categories such as ‘Weapons’, ‘Home-Made Production’ (covering explosives and bomb-making, including CBRN materials and weapons), ‘Guerrilla Warfare’ and ‘Regular Military Operations’.²⁵² In addition to Arabic documents and manuals, it also contains a large corpus of English manuals and links to recommended web pages. In 2004 the Encyclopaedia contained around 300 Arabic documents amounting to some 10,000 pages,²⁵³ and its most popular files are frequently posted on jihadi discussion forums. It should be noted that the sources of this encyclopaedia vary greatly; some manuals are written by veterans of the Afghan war, others by Palestinian insurgents, while still others by Internet activists with little or no battle experience. Some manuals are apparently translated from US Army Field Manuals, while others seem to be derived from *The Poisoner’s Handbook* and other underground literature.²⁵⁴

Overall, there are relatively few CBRN manuals available on jihadi web pages. By mid-2007, around 10 CBRN manuals had been identified in addition to one English-language video on

²⁵⁰ Ibid., 1428.

²⁵¹ The percentage for the other forums were: *muntadayāt al-nuṣra al-jihādiyya*: 2.8 per cent (<http://www.alnusra.net/vb/>), *ṣabakat ‘abū al-buḥārī al-islāmīyya*: 3.9 per cent (<http://www.abualbokhary.info/vb3/>), *muntadayāt risālat al-‘umma al-jihādiyya*: 3.9 per cent (www.al-ommh.net/vb/). All forums were accessed on 19 December 2006.

²⁵² In the introduction to the 3rd edition, the editors write: “In order to improve the military knowledge of our brothers in the Islamic movements, we present to you our third edition of the Encyclopaedia of Preparation (for Jihad) to enable the capable Jihadist cadres with God’s help to reestablish the Islamic Khalifate.” Available at http://geocities.com/m_eddad/ (3rd ed.) and http://www.geocities.com/i3dad_jihad4/ (4th Ed.) (accessed 2 March 2007).

²⁵³ The estimate is based on a version of the Encyclopaedia’s 4th ed., which was downloaded by the FFI on 6 June 2005.

²⁵⁴ Maxwell Hutchkinson, *The Poisoner’s Handbook* (El Dorado: Desert Publications, 2000).

how to extract ricin. In comparison, there are more than 40 Arabic-language videos available on conventional weapons and how to make various explosives. CBRN weapons are not a very popular discussion topic. An analysis of the *al-Firdaws* forum revealed that of 764 threads posted in the sub-forum for Equipment and Preparation, 35 (4.6 per cent) were CBRN-related.²⁵⁵ The analysis also showed no indication that the topic of CBRN has become more popular, or that new handbooks or formulations have been produced. In 2005, 20 CBRN-related threads (4.7 per cent of total) were posted, while in 2006, 15 CBRN-related threads were posted (4.4 per cent of total). These threads include discussions of how to make and deliver different CBRN agents, copies of newspaper articles on al-Qaeda and CBRN, formulations for CBRN agents or links to manuals, many of which are from the Encyclopaedia of Preparation.

This is a summary of the topics most frequently discussed on the *al-Firdaws* sub-forum for equipment and preparation. The statistics are based on an analysis of 764 threads that were posted over a period of roughly two years (February 2005-December 2006). The topic of each thread was determined by looking at the topic of the first message within the thread.

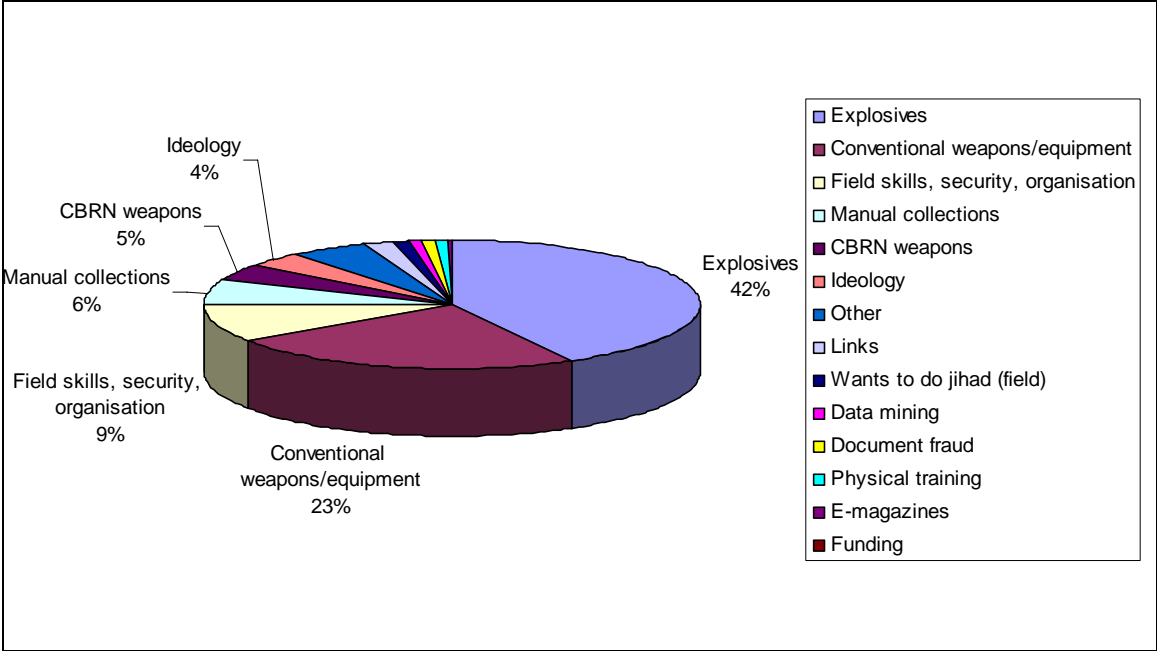


Figure 2: Discussion topics in a typical jihadi discussion forum

²⁵⁵ *Al-Firdaws* was chosen because it had the largest archive of threads in addition to having a separate sub-forum for equipment and preparation. The archive dates back to February 2005.

Other forums, although with much smaller archives, showed a similar pattern. In both *Muntadayāt al-nuṣra al-jihādiyya* and *Muntadayāt al-muhājirīn*, the sub-forums for preparation only contained around 5 percent of CBRN-related threads (15 of 278 threads in *al-Nuṣra*; 7 of 154 threads in *al-Muhājirīn*).²⁵⁶

Arabic title	English translation	Type ²⁵⁷	Format	Pages ²⁵⁸
ṣināʿat al-sumūm (mawsūʿat al-jihād)	The Making of Poisons (from: Encyclopaedia of Jihad)	BC	pdf	8
durūs ʿaskariyya fī jihād al-ṭawāğīṭ	Assassinations with Poison (from: Military Studies in the Jihad Against the Tyrants)	BC	paper ²⁵⁹	6
The Mujahideen Poisons Handbook (in English)	The Mujahideen Poisons Handbook	BC	pdf	19
dawrat al-sumūm wal-ğāzāt al-sāmma al-šaʿbiyya	Course in Home-Made Poisons and Poisonous Gases	BC	pdf	30
dawrat al-sumūm waʿl-ğāzāt al-sāmma al-kubrā (mawsūʿat al-sumūm)	Comprehensive Course in Poisons and Poisonous Gases (The Poisons Encyclopaedia)	BC	pdf	99
al-risāla al-sāmma	The Poisonous Letter	C	JPEG	1
ḥarb al-sumūm	Poison Warfare	BC	HTML	10
al-mubtakar al-farīd	The Unique Invention	C	pdf	12
al-silāḥ al-biyūlūji	Biological Weapons	B	word	19
taḥḍīr samm al-būtūlīzm (sāmm al-taʿām al-fāsīd)	Preparation of Botulism Toxin (rotten meat poison)	B	pdf	28
al-talawwuṭ al-ʿiṣāʿī	Radiological Pollution	R	HTML	2
al-qunbula al-nawawiyya al-jihādiyya wa kayfiyyat al-taxṣīb al-nawawi	The Nuclear Bomb of Jihad and How to Enrich Uranium	N	pdf	479
	TOTAL			713

Figure 3: List of CBRN manuals and documents

According to the list above, roughly 700 pages of CBRN manuals have been found online (noting, however, that 479 of these belong to one single manual). Only manuals written or produced for jihadi purposes have been included in the list. Other examples of CBRN-related material posted on jihadi forums include:

- Handwritten notes on poisons, explosives and electronics (the notes on poisons are very similar to formulations found in other jihadi poison manuals, indicating that the content of the manuals may correspond to poison courses taught in jihadi camps).

²⁵⁶ *Muntadayāt al-nuṣra al-jihādiyya*, <http://www.alnusra.net/vb/>; and *Šabakat muhājirūn al-ʿislāmiyya*, <http://www.mohajiroon.com/vb/>. Both forums are inactive as of November 2007.

²⁵⁷ C=Chemical, B=biological, R=Radiological, N=Nuclear.

²⁵⁸ Pages are based on the given format. The manuals may exist in other formats, with different pagination.

²⁵⁹ This manual was originally uncovered in paper format during a police raid in Manchester in 2000. I have not recovered the original version, thus I had to rely on an English translation of the document.

- Two manuals on chemical and biological warfare, issued by the Iraqi Army in the 1980s.
- Research paper on nuclear fuel (written in Arabic, but with no references to jihad).
- English CBRN handbooks and manuals, such as the American ‘survivalist’ Kurt Saxon’s video on how to make ricin (with no references to jihad).

This thesis has only considered CBRN manuals produced by the jihadists themselves; it should be noted, though, that there is a vast amount of open-source information on CBRN weapons available online. Sometimes this has also been used by jihadists, such as in the Barot case discussed above. It has not been included here because I have assumed that the CBRN interest of the al-Qaeda network is most clearly reflected in self-produced materials and discussions on jihadist web pages.

5.4.2 Chemical and biological manuals

Overview of chemical and biological manuals

Eight of the twelve documents examined are dedicated to chemical agents and weapons (they are labelled ‘BC’ in the table because they also contain recipes of how to produce toxins), while two are related to biological agents and weapons. They differ in length, quality and content, but most documents fall into one of three categories:

1. Collections of crude poison-making methods, similar to those found in The Poisoner’s Handbook.
2. Recipes requiring advanced laboratory equipment and skills. Based on scientific articles, college textbooks.
3. Recipe of a crude, chemical device, including a fully developed dispersal mechanism

Category 1

“The making of poisons” (*ṣināʿat al-sumūm*) is not a separate manual, but a section of a larger jihadi manual, “The Encyclopaedia of Jihad” (*mawsūʿat al-jihād*). It is a 1500-page manual which is frequently posted on forums.²⁶⁰ According to the editors, the text was originally “written by the Arab Mujahedin during their jihad against the Soviets”, and published by the Service Bureau (*maktab al-ḥidamāt*) after the war.²⁶¹ The electronic version, which claims to

²⁶⁰ For example, a link to this document was posted on *al-Firdaws* 18 August 2006 as part of a collection named “al-Mawsūʿa al-ʿAskariyya”, www.firdaws.org/vb. The manual is also included in the Encyclopedia of Preparation.

²⁶¹ “موسوعة الجهاد الجزء الثاني: الدورات العملية” (Encyclopaedia of Jihad Part 2: Practical lessons), First electronic edition, issued by *Anṣār al-Jihād* (1423 h.): 2.

be a re-production of the original text, is dated 1423 h. (approx. 2002).²⁶² The manual has an 8-page section entitled ‘the making of poisons,’ which is divided into the sections ‘poisonous plants,’ ‘poisonous alkaloids,’ ‘poisonous chemicals,’ ‘poisonous gases’ and ‘poisonous explosive substances.’ The text seems to be more or less directly translated from *The Poisoner’s Handbook* by Maxwell Hutchkinson.²⁶³ It is not surprising, therefore, that a page from *The Poisoner’s Handbook* was among the documents found in Afghanistan after the fall of the Taliban.²⁶⁴

Another well-known manual is “Military Studies in the Jihad Against the Tyrants”, also known as “The Manchester Manual” since it was first uncovered by the British police in 2000 in Manchester, England during a search of the home of Abū ’Anas al-Lībī, a suspect in the US embassy bombings in Kenya and Tanzania in 1998.²⁶⁵ It was among the first so-called ‘al-Qaeda-handbooks’ to be translated into English and made publicly available, and thus drew a great deal of media attention. It has been thoroughly analyzed and the English translation of it can easily be accessed on the Internet.²⁶⁶ On jihadi websites, however, the manual is rarely spotted. The origins of the manual are unknown, but according to Jerrold Post, parts of the manual may originate from radical Islamist circles in Egypt.²⁶⁷ The manual covers a range of topics, and only 6 of the 180 pages are dedicated to chemical agents. Lesson 16, “Assassinations using Poisons and Cold Steel” was initially deleted from the publicly available translation, but was later declassified and released following a Freedom of Information Act request. Lesson 16 provides crude instructions on how to make poisons such as ricin and botulinum toxin. As in the Encyclopaedia of Jihad, the formulations appear to be direct translations from *The Poisoner’s Handbook*.²⁶⁸ These two manuals do not talk about the agents as ‘weapons of mass destruction’, but rather as a means of assassination. It is interesting to note, however, that many of the “CBRN manuals” distributed later include formulations that are fundamentally similar to these.

²⁶² This year would correspond to the period March 2002 – March 2003.

²⁶³ See Maxwell Hutchkinson, *The Poisoner’s Handbook* (El Dorado: Desert Publications, 2000). 7-14, 29-33, 45-49, 54-56.

²⁶⁴ C.J. Chivers and David Rohde, “The Jihad Files”, *The New York Times*, 17 March 2002, http://www.nytimes.com/packages/html/international/20020317terror_DOCUMENTS/index5.html (accessed 9 May 2007).

²⁶⁵ This analysis is based on the translated version of the manual, as the original was not available.

²⁶⁶ The manual can be accessed, for example at <http://www.thesmokinggun.com/archive/jihadmanual.html> (accessed 19 December 2007). For an analysis of the manual, see Jerrold M. Post, ed., *Military Studies in the Jihad Against the Tyrants: The Al-Qaeda Training Manual* (Alabama: USAF Counterproliferation Center, 2005).

²⁶⁷ Post, *Military Studies in the Jihad*, ix; Roy Gutman, “Training in Terror”, *Newsweek Web Exclusive*, 26 October 2001, <http://www.msnbc.msn.com/id/3067505/site/newsweek/from/RL.2/> (accessed 9 May 2007).

²⁶⁸ Hutchkinson, *The Poisoner’s Handbook*, 7-14, 25-26.

“The Mujahideen Poisons Handbook” is a 19-page English manual signed by Abdel-Aziz and dated 7 February 1996. The document has been distributed as part of the Encyclopaedia of Preparation, and may be found on a host of other militant websites. The author claims that the manual is based on “a poisons course” that he attended with “certain” groups whose “first language was not English.”²⁶⁹ The manual describes 26 different chemical and biological agents²⁷⁰, one-third of which appears to have been tested on rabbits. The manual includes six formulations for poisonous gases, but none of these was tested on animals. The delivery methods suggested in the manual include adding the poison to food or drink, “air-gun pellets and to make poison-tipped arrows” or in an oily cream to be applied to the skin of the victim. As for the gases, it proposes putting each of the two reactants for the poisonous gas in a glass bottle, strapping them together and throwing them at the target.²⁷¹

The manual “Course in Home-Made Poisons and Poisonous Gases” (*dawrat al-sumūm wal-ġāzāt al-sāmma al-šaʿbiyya*) is produced by the Islamic Media Center (IMC).²⁷² It is 27 pages long, and consists of a scanned document entitled “Chapter 2: Poisons... and how to use them in killing”. The content is similar to the Mujahideen Poisons Handbook, but the descriptions of experiments are slightly more detailed, and it also includes experiments with poisonous gases (hydrogen cyanide and hydrogen sulphide) on rabbits. The manual also contains a 4-page section on how to deliver the agents, including crude sketches of how to fill artillery shells with poisons or poisonous gases. It mentions the prospect of “causing mass death of people”, and it is also suggested to spread the poisons by “spraying them from a plane at a low altitude”.²⁷³ Other methods described are poisonous bullets and arrows, poisonous home-made “hand grenades” and the use of skin-penetrating liquid (this section appears to be inspired by *The Poisoner’s Handbook*). None of the delivery methods is attributed to specific agents, it is simply stated that all the mentioned poisons and gases can be used. The manual ends with a section on how to treat poisoning. Although the delivery methods described

²⁶⁹ Abdel-Aziz, “The Mujahideen Poisons Handbook” (7 February 1996): 1-2. Downloaded from *Mawsuʿat al-iʿdād*, 4th ed., 6 June 2005. http://www.geocities.com/i3dad_jihad4/.

²⁷⁰ The paragraph “poisonous/useful drugs” is counted as one agent, as it is merely a list of drugs and their lethal dose.

²⁷¹ Abdel-Aziz, “The Mujahideen Poisons Handbook”, 6, 10, 13, 16.

²⁷² The Islamic Media Center (IMC) can be viewed as one of al-Qaeda’s first ‘media agencies.’ It claims to have existed since 1991 or earlier, and has distributed and/or produced thousands of pages of jihadi training manuals. Its online activity seems to have vanished since 2005. For more on this, see Brynjar Lia, “Jihadi Web Media Production: Characteristics, Trends, and Future Implications”, Paper presented at “Check the Web” Conference in Berlin, 26-27 February 2007, http://www.mil.no/multimedia/archive/00092/Jihadi_Web_Media_Pro_92100a.pdf (accessed 10 July 2007).

²⁷³ Abū Ḥudayfa al-Šāmī, “دورة السموم والغازات السامة الشعبية” (Course in Home-Made Poisons and Poisonous Gases), *Islamic Media Center* (file modified 16 September 2004): 58-59. Downloaded from *Mawsuʿat al-iʿdād* 4th ed., 6 June 2005. http://www.geocities.com/i3dad_jihad4/.

would hardly have any mass-casualty outcome, this mentioning of “causing mass death of people” makes this manual somewhat different from the ones previously discussed, as they were for assassination only.

“Comprehensive Course in Poisons and Poisonous Gases” (*dawrat al-sumūm wa'l-ġāzāt al-sāmma al-kubrā*) is the largest chemical manual of the available CBRN manuals online. The manual is divided into six chapters entitled “Poisons”, “Home-Made poisons”, “Some poisonous gases”, “Chemical poisons”, “Natural poisons”, “How to use the poisons and treatment”.²⁷⁴ The first chapter is a general introduction to toxicology. The rest of the manual consists of descriptions and formulations of various poisons and poisonous gases, as well as descriptions of experiments on rabbits. Parts of the text are very similar to the Course in Home-Made Poisons and Poisonous Gases, and the Mujahideen Poisons Handbook. These similarities can be found both in the formulations and in the descriptions of experiments. It thus appears that parts of the manuals have been written based on the same notes, or based on each other. The chapter about delivery methods is also similar to the one in the Course in Home-Made Poisons and Poisonous Gases, with some additions. It describes methods for causing mass death, but also describes how agents can be used for assassination.

“The Poisonous Letter” (*al-risāla al-sāmma*), is a short text that describes how to make a ‘poisonous letter’ by soaking it in a cyanide solution. “Poison Warfare” (*ḥarb al-sumūm*) talks about how to target Americans in Saudi Arabia, and suggests a number of suitable poisons, like cyanide, agricultural poisons, snake venom and others, but does not provide details about how to manufacture them. With regards to cyanide, the author simply suggests to “go to one of the shops that sell poisons, and ask for cyanide (rat poison)...”²⁷⁵ But he also suggests a range of delivery methods, like mixing cyanide with skin cream and applying it to car doors, injecting the poison into food items in the target’s shopping basket “when he is not looking”, or spraying the agent into the air-conditioning system of houses or cars, noting that “in the car it is more effective”.²⁷⁶ Apparently the manual is focused on targeting individuals, and does not mention “mass-casualty” or simultaneous attacks. There are no descriptions of experiments.

²⁷⁴ “دورة السموم والغازات السامة الكبرى” (Comprehensive Course in Poisons and Poisonous Gases), *Islamic Media Center* (file modified 9 December 2002): 14. Downloaded from *Mawsu'at al-i'dād*, 6 June 2005, http://www.geocities.com/i3dad_jihad4/

²⁷⁵ “حرب السموم” (Poison Warfare). *Islamic Media Center*, file modified on 8 November 2003. Downloaded from *Mawsu'at al-i'dād* 4th ed., 6 June 2005. http://www.geocities.com/i3dad_jihad4/.

²⁷⁶ *Ibid.*

Category 2

There are two longer manuals on biological weapons, which both are based on scientific textbooks and articles, rather than crude underground literature such as *The Poisoner's Handbook*. The first manual, "Biological Weapons" (*al-silāḥ al-biyūlūji*), is a 19-page document that is supposed to describe methods for growing the bacteria *Yersinia pestis* (causing the plague) and *Clostridium botulinum* (producing botulinum toxin). The author states that the content of the manual is taken from the book *Microbiology* by Pelczar, Reid and Chan, as well as an Arabic book on bacteriology and "some articles on the Internet".²⁷⁷ The author has chosen the plague bacteria "due to the relative easiness of getting hold of it and because of the possibility of using it in the form of spray (aerosol). Thereby it can easily be spread in the air, striking an innumerable number of people with lethal pneumonic plague". He does not, however, discuss the major technical difficulties of creating such an aerosol weapon, nor does he mention the fragility of the plague microbe, which makes it unsuitable as an air-delivered weapon. The author briefly suggests some delivery methods, such as spreading the toxin "in aerosol form or in artillery charges", and also suggests combining biological weapons with a suicide bombing, claiming that "the explosion will disperse the weapon over a wide range".²⁷⁸ The other manual is entitled "Preparation of Botulinum Toxin (Rotten Meat Poison)" (*taḥḍīr samm al-būtūlīzm (sāmm al-ta'ām al-fāsīd)*). The 28-page manual aims to describe how to grow *Clostridium botulinum* bacteria, and is divided into six chapters: 1) searching for the bacteria, and its isolation; 2) ideal requirements for the production of the toxin; 3) isolation of the toxin, and its purification; 4) assay [sic] of the toxin; 5) storing of the toxin and its stability; 6) how to use the toxin as a biological weapon. The section on weaponizing the agent consists of less than one page and most of the manual is dedicated to describing how to produce the toxin. Parts of the text were found to be identical to English-language articles available on the Internet,²⁷⁹ and the text seems to be copied from other sources rather than having been developed and tested by the author. This is confirmed by the author himself, who states in the introduction:

In preparing this report, I relied on a study on the theoretical characteristics of the toxin and the various methods to purify it, and I tried to pick the method which was

²⁷⁷ Parts of the manual were found to be similar to passages in Michael J. Pelczar, Roger D. Reid and E.C.S. Chan. *Microbiology*. 4th edition. United States: McGraw-Hill, 1977.

²⁷⁸ "السلاح البيولوجي" (Biological Weapons). Publisher unknown, file modified 25 September 2005: 16. Downloaded from *Mawsu'at al-i'dād*, 6 June 2005. http://www.geocities.com/i3dad_jihad4/.

²⁷⁹ For example, parts of the manual were found to be identical to the text in an article on the U.S. Food and Drug Administration's home page. "Chapter 17: Clostridium botulinum", *Bacteriological Analytical Manual Online*, <http://www.cfsan.fda.gov/~ebam/bam-17.html> (accessed 7 March 2007).

easiest and most effective, but at the same time most inexpensive. However, I was unable to implement it in practice, because I lacked the opportunities to do so.²⁸⁰

The author also stresses that in order to carry out the procedures described in the manual, “a person with a scientific background is needed (student or graduate)”.²⁸¹

Category 3

“The Unique Invention” (*al-mubtakar al-farīd*) is the only manual that actually describes a relatively complete, chemical device. Figure 4 is taken from the manual, showing the device from above.²⁸² It consists of a metal box containing four glass bottles filled with acid, surrounded by two chemicals. The idea is to break the glass bottles with a small explosive charge, causing the acid to mix and react with the two other chemicals and produce poisonous gases, which will be released through holes in the device. The manual contains detailed explanations and illustrations on how to assemble it, as well as suggestions on what kind of places to target and from where to obtain the chemicals. However, in spite of its relative sophistication, the manual does not appear to be more popular or more discussed than other online CBRN material. No reports on tests or experiments using the device have been found, although the author states in the manual that “the Invention, which is presented on these pages, is the result of experiences from the months and years of preparations and planning...”²⁸³ The document is nevertheless interesting, because it is the only CBRN manual among those examined that reflects a comprehensive attempt at designing an improvised chemical device for use against an indiscriminate target. Ron Suskind claimed in *The One Percent Doctrine* (2006) that al-Qaeda had planned to use this device (referred to as “mubtakkar” [sic]) on the New York subway in 2003, but that the plan had been aborted by Ayman al-Zawāhirī for unknown reasons.²⁸⁴ No evidence of the plot was ever found, however.

²⁸⁰ “تحضير سم البوتيزولزم (سم الطعام الفاسد)” (Preparation of Botulinum Toxin (Rotten Meat Poison)). *Mawsu'at al-i'dād* (date unknown); 2. Obtained via e-mail correspondence with Rebecca Givner-Forbes, Terrorism Research Center, July 2006.

²⁸¹ Ibid.

²⁸² “المبتكر الفريد” (The Unique Invention). Publisher unknown (file modified 2 November 2003): 8. Downloaded from *Mawsu'at al-i'dād* 4th ed., 6 June 2005. http://www.geocities.com/i3dad_jihad4/. Names of some of the chemicals have been omitted from the figure.

²⁸³ “المبتكر الفريد”, 1.

²⁸⁴ Ron Suskind, *The One Percent Doctrine* (New York: Simon & Schuster, 2006), 218-220.

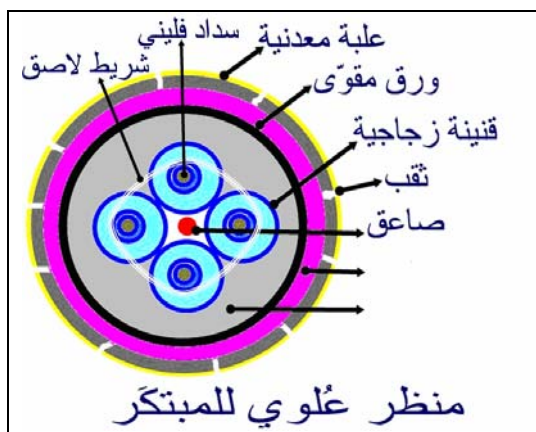


Figure 4: The unique invention

What is the technical quality of the chemical and biological formulations?²⁸⁵

As noted above, the chemical and biological manuals can roughly be divided into three categories. The formulations in the first category of manuals are generally very crude, and can be carried out in an improvised facility such as a kitchen or a garage. Also, they are often based on materials that are relatively easy to obtain, such as castor beans, nicotine, hydrochloric acid, potassium cyanide and so on. The recipes on how to extract ricin from castor beans, found in several of the manuals, are illustrative of the technical quality of these manuals. The formulation is essentially similar to the procedure described in *The Poisoner's Handbook*, and is based on rinsing castor bean pulp with acetone in order to remove the oil from the pulp. After drying the pulp, a white powder is obtained, which is described as “the poison” and sometimes as “pure ricin”.²⁸⁶ In reality, the result is far from pure. A Spanish laboratory which tested the above-mentioned recipe, obtained extracts containing 0.01-0.33% ricin, depending on what variety of the castor plant the seed was taken from (the jihadi manuals do not specify what variety should be used). The Spanish test concluded that the low content of ricin makes the agent unsuitable as a “weapon of mass destruction”, although it might be used against “selective targets, limited to one or several persons.”²⁸⁷

The second category of manuals describe procedures requiring advanced laboratory equipment and skills, but these manuals also lack effective instructions on how to weaponize the agents. They appear to be based on open sources only, such as scientific articles and

²⁸⁵ For a more comprehensive evaluation of the technical quality of these manuals, see Anne Stenersen and Brynjar Lia, “Al-Qaida’s online CBRN manuals: A real threat?” *FFI-Report* no. 2007/02405 (forthcoming).

²⁸⁶ Maxwell Hutchkinson, *The Poisoner's Handbook* (El Dorado: Desert Publications, 2000); Kurt Saxon, *The poor man's James Bond greets the russians*, downloaded from www.ozooo.tk (accessed 30 May 2006).

²⁸⁷ Pita René et al., “Extracción de ricina por procedimientos incluidos en publicaciones paramilitares y manuales relacionados con la red terrorista al-Qaeda” (Extraction of ricin by procedures featured on paramilitary publications and manuals related to the Al Qaeda terrorist network), *Medicina Militar* 60, no.3 (2004).

textbooks, and have not been developed through experiments and testing. There is generally little interest in these manuals on jihadi Internet forums (more on this below).

The third category of manuals differs from the two others as it is the only type of manual that actually describes a realistic delivery mechanism for a chemical or biological agent. Among all the manuals examined, the *mubtakar* is probably the only document that reflects an innovative effort on part of the jihadists. One should keep in mind, however, that the manual does contain certain technical shortcomings, and that the actual effectiveness of the device is debatable. Another point worth noting is that there are still no known attempts by jihadists to assemble or use the device, although the manual has been available online since at least 2004.²⁸⁸

The nature of the experiments

As mentioned above, several of the manuals describe experiments with poisons and poisonous gases on rabbits. The description of the experiment typically consists of how much poison was given to the rabbit, how it was given, and the time until death. Some also include a description of the symptoms, and whether the rabbit was “strong” or “small”. Most experiments are repeated several times, using different methods such as applying poison to the rabbit’s skin, injecting it and adding it to the animal’s food and water. These experiments are used as ‘proof’ that the formulations work. The problem with these experiments is that symptoms are often vaguely described, and with a few exceptions, placebo tests are not conducted. Thus, we do not know whether the rabbit died from the poison, the solvent or from other substances manufactured instead of the intended poison. The following excerpt may serve as an illustration. Here, the author describes an experiment in which a substance thought to be botulinum toxin is tested on a rabbit. The procedure for making the substance is well-known from English literature; it consists of mixing meat with droppings or soil, putting the ingredients in a jar, filling it with water and closing it tightly, and leaving it in a tempered place for some days.²⁸⁹ After providing a description of the manufacture procedure, the manual states,

²⁸⁸ This author’s version of “The Unique Invention” was downloaded by the Norwegian Defence Research Est. (FFI) in the fall of 2004. The file was created on 3 November 2003. Ron Suskind claimed in 2006 that an al-Qaeda cell had planned to use the device against the New York Metro in 2003, but that the plan had been aborted by Ayman al-Zawahiri. The claim is hard to verify. The information was given by a CIA informant, and has not been confirmed by other open sources. A manual describing the device was also found on a computer belonging to an al-Qaeda-suspect arrested in Bahrain, January 2003, but there were no indications that the arrested had made experiments with the device. Ron Suskind, *The One Percent Doctrine* (London: Simon & Schuster, 2006).

²⁸⁹ Maxwell Hutchkinson, *The Poisoner’s Handbook* (El Dorado: Desert Publications, 2000), 25-26.

After ten days, a coffee-brown piece appeared on the surface of the water and on the glass walls. Then I took this brown substance and dissolved a small amount of it, about 0.1 g or less, in ethyl alcohol (about 5 mL). We took 1 mL of this solution and injected it into a strong-built rabbit, and it died eighteen (18) hours after the appearance of the above-mentioned symptoms...²⁹⁰

The claim that the “brown substance” manufactured in this procedure is the botulinum toxin is a myth, however. In reality, the experiment is likely to yield a host of different bacteria, many of which may be capable of killing a rabbit. Even if the experiment was carried out the way it is described, the rabbit’s death is no proof that botulinum toxin was produced, nor illustrative of how potent the manufactured ‘poison’ is. The description of the experiments may, on the other hand, serve to convince an unskilled reader of the formulation’s validity.

The gases tested on rabbits included hydrogen sulphide, chlorine, phosgene, carbon monoxide and hydrogen cyanide. For all these gases, the tests are conducted by leaving the rabbit in a small, confined area and releasing the gas by simply mixing two reactants. The method is similar to the one seen in the video found in Afghanistan and later shown on CNN, in which a poisonous gas appears to be tested on a dog. Ahmed Ressam, who was convicted of plotting to bomb L.A. airport in 2001, stated in a testimony that in Afghanistan he saw a demonstration in which hydrogen-cyanide gas was used on a dog.²⁹¹ Scientists disagree, however, as to which gas was actually used in the infamous dog video. Ressam told the court that experiments with gases on dogs were carried out because “we wanted to know what the effect of the gas is”. He also testified that he had learned to mix cyanide with an oily substance and smear it on doorknobs. Thus, it seems that Ressam’s testimony corresponds well with the content of the online chemical and biological manuals.

No accounts were found of anyone actually testing a biological or chemical device. The only “delivery system” for poisons reported tested is poison dissolved in di-methyl sulphoxide (DMSO) and applied to the skin of rabbits.

By comparing the different chemical and biological manuals available online, it seems clear that for chemical manuals there has been a certain development in terms of sophistication and technical quality. While early documents were mere translations of *The Poisoner’s Handbook*, other documents seem to have been further developed by the jihadis themselves, including lab experiments and testing the agents on rabbits, though most of them seem very amateurish. The Islamic Media Center played an important role in compiling and distributing this

²⁹⁰ “دورة السموم والغازات السامة الكبرى”، 14.

²⁹¹ Ahmed Ressam’s testimony in “United States of America v. Mokhtar Haouari, Defendant”.

material. The manuals seem to be compiled from several sources, probably including notes from poison-training courses. With one exception, however, the online manuals have not yet presented any effective delivery methods for the agents. In the Comprehensive Course in Poisons and Poisonous Gases, for example, half of the chapter on delivery methods provides crude sketches of poisonous artillery shells for use on a battlefield (the target is described as “troop concentrations” and “enemy trenches”), while the other half is taken from the chapter on assassination methods in *The Poisoner’s Handbook*. However, The Unique Invention indicates that a certain amount of innovation has taken place, as it includes instructions on how to manufacture a crude dispersal device for a chemical agent. It does not appear to be copied and pasted from other sources, but is instead a product of jihadists’ own efforts. It should be noted that this manual has not replaced other online chemical manuals, but is available alongside other, less developed chemical formulations and manuals that are equally popular among the online jihadist community.

5.4.3 Radiological and Nuclear manuals

Nuclear manuals

A manual entitled “The Nuclear Bomb of Jihad and How to Enrich Uranium” (*al-qunbula al-nawawiyya al-jihādiyya wa kayfiyyat al-taxṣīb al-nawawi*) has been available on jihadi forums since at least January 2006.²⁹² Since that time, the manual has been circulated on various forums, and it seems to be very popular. For example, in January 2007 it had the status of a ‘sticky’ link on the *al-Firdaws* sub-forum for equipment and preparation, and it was the most visited thread with more than 13,000 viewings. In comparison, the second most popular link at that time, entitled “Rockets (very, very important)” was viewed 2,628 times.²⁹³

The manual has a total of about 470 pages, and is divided into 19 lessons. It is authored by an active forum member with the nickname ‘No1’, who admits he learned his skills from the Internet. In the introduction he writes:

I have spent two years studying nuclear physics on scientific and jihadi forums, as well as studying rocket science, and different kinds of explosives and bombs. I have been convinced that the strategic balance of power in the military field for the *mujāhidūn* will not change without true scientific progress. In order to make this progress and to experiment, it is absolutely necessary to have laboratories. Therefore,

²⁹² “الله أكبر : اربعة عشر درسا في تصنيع القنبلة النووية بالصور (سارع بالتحميل)”, *Šabakat risālat al-umma al-jihādiyya* (January 2006), <http://www.alommh.net/forums/showthread.php?t=911> (accessed 17 February 2006).

²⁹³ *Muntadayāt al-firdaws al-jihādiyya*, www.alfirdaws.org/vb/ (accessed 12 January 2007).

try to keep the experiments easy and at an arm's length, my *mujāhid* brother, or, as they say, in the kitchen.²⁹⁴

The manual itself confirms this picture. It consists of a collection of texts, illustrations and articles from various sources that seem to be randomly put together without much regard as to whether the information is correct or not. One example of the numerous technical errors in this manual is found in lessons 10-12 where the author claims that melting exactly 80,1 kg of radium with a mixture of iron oxide and aluminium (so-called 'thermite') will cause a nuclear explosion similar to the Hiroshima bomb. More realistic options such as merging radium with regular explosives in order to manufacture a Radiological Dispersal Device (RDD) are not mentioned. The chapter about how to obtain radioactive material is equally far-fetched. Lesson 18 of the manual describes how to extract uranium and other radioactive substances from black sand.²⁹⁵ Any thoughts about how to obtain the material illegally on the black market are not offered. To be sure, the manual does provide a general introduction to nuclear physics and the history of the nuclear bomb, but not much more.

The forum discussions related to radiological and nuclear weapons seem to be on the same elementary level as the manual, begging the question whether these discussions are to be taken seriously at all. The lack of basic technical knowledge on the subject is striking. The discussions seem to deal with the topic in a serious manner, though. Members ask specific questions, and other members (having gained status as "experts" due to their previous postings) give answers and explanations, often by referring to texts in the nuclear manual, or posting their own answers which are not necessarily any more scientific. When asked how to protect oneself from radioactive material, for example, one "expert" answers that putting the radioactive material in the freezer will stop the radiation.²⁹⁶

Dirty bombs

There are extremely few references to radiological weapons in the online jihadi discourse and literature. The manual "The Nuclear Bomb of Jihad" mentions the word "dirty bomb" (*qunbula qaḍira*), but the kind of "dirty bomb" directions it provides consists of putting a piece

²⁹⁴ "القنبلة النووية الجهادية وكيفية التخصيب النووي" (The nuclear bomb of jihad and how to enrich uranium), date and publisher unknown, downloaded from *Šabakat risālat al-umma al-jihādiyya* (January 2006): 2.

<http://www.alomh.net/forums/showthread.php?t=911> (accessed 17 February 2006).

²⁹⁵ The concept could be carried out in practice, but would require large industrial complexes. For example, 13,000 tons of sand would have to be processed to obtain enough uranium for one nuclear weapon. See "Production of nuclear materials", *Nuclear Threat Initiative*,

http://www.nti.org/e_research/cnwm/overview/technical4.asp (accessed 9 July 2007).

²⁹⁶ "فتح باب المناقشة حول السلاح النووي و تصنيعه", thread started by 'Layṭ al-'Islām' on *Muntadayāt al-firdaws al-jihādiyya* (20 August 2006), www.alfirdaws.org/vb (accessed 10 January 2007).

of uranium “under the bed of the person you want to get rid of”, with the claim that this will kill him “instantly and without a scar”.²⁹⁷ This has of course nothing to do with realistic ways of assembling a radiological dispersal devices (RDD). In general, members of jihadi discussion forums have very little knowledge of the nature of “dirty bombs”, and usually suggest using a form of uranium in them, although natural uranium would be a highly ineffective agent for this purpose, due to its low radioactivity. Sometimes, there are glimpses of realism in the discussions. One participant noted, for example, that a dirty bomb “will have a propaganda effect only”.²⁹⁸

In the autumn of 2006, however, a document entitled “Radioactive Pollution” (*al-talawwuṭ al-iṣcā'i*) was uploaded to the Internet, and this was of a very different category to the material discussed above. The document was located inside a folder entitled “Guerrilla Warfare” (*ḥarb al-aṣābāt*) and one would have to download the whole zip file and unzip it before actually noticing the document. The document was undated, but the file was modified on 14 August 2005. The 2-page document starts by describing the effects of radioactive pollution, and refers to two specific cases in which radioactive material was dislocated. The first incident took place in Goiania, Brazil in 1987, in which a container of Caesium-137 was stolen from an abandoned radium clinic and later dispersed. In Mississippi, USA the same year, small packages of Thallium-67 and Iodine-131 were spread along the highway due to a traffic accident. The description includes technical data on the substances involved, the extent of the pollution, as well as the costs of the clean-up. The aim of the author is, obviously, to show how even tiny amounts of such materials can cause major havoc and economic loss. He then provides suggestions as to where such material can be “easily obtained”, for example from “modern smoke detectors” and various medical equipment, and he notes that an easy and secure way of obtaining such material is “during its transportation between the place of production and the places of use or storage”. Details on how to manufacture the dirty bomb are not provided, the author simply suggests taking the radioactive material and putting it around “the explosives you have available”. However, the method and rationale for such an attack are carefully explained:

²⁹⁷ “القنبلة النووية الجهادية وكيفية التخصيب النووي”, chapter 18.

²⁹⁸ However, the same user displays a lack of knowledge about the nature and characteristics of RDDs. The message started with the following definition: “The dirty bomb is a bomb made of regular explosives, where radioactive material has been added, like we add to the thermit uranium oxide with iron oxide and pieces of aluminium, knowing that radioactive materials consist of all the elements following after mercury in the periodic table”. Layṭ al-Islām, “القنبلة النووية الجهادية”, *Muntadayāt al-firdaws al-jihādiyya* (6 October 2005), www.alfirdaws.org/vb/showthread.php?p=16731&page=2 (accessed 22 May 2006).

Put the bomb in a city crowded with large markets and commercial shops. Explode it, even if it is time for the shops to close, in the evening for example, because the important thing is to spread the radioactive material in that commercial area, so that the government will close that area and everything around it because of the power of the material and the area of its dispersal. By this, you cause a large economic crisis to this country...²⁹⁹

Although such documents exist, it is remarkable how little interest is devoted to radiological weapons in the forums compared to the great interest and details found in the discussions of regular explosives: especially when bearing in mind that the Western media repeatedly talk about the propaganda effect such an attack would cause, and also that the materials are easy to obtain.

5.4.4 The nature of online CBRN discussions

Most of the CBRN manuals discussed above have existed for several years, and are circulated online as part of a larger ‘online curriculum’ for aspiring jihadists. Because of the large amount of material, however, it is hard to estimate the significance of these manuals. Are they actually being read, or do they just drown in all the other material published? The CBRN-related discussions taking place on jihadi forums might give some further indications of the CBRN ambitions of al-Qaeda’s online sympathizers.

The first thing that can be noted is that forum members that involve themselves in CBRN-related discussions do not appear to be highly trained or professional scientists. Rather, they seem to draw their knowledge from the media and Internet. In a discussion about ricin, for example, one of the participants stated that he had used Google to find information.³⁰⁰ It is not surprising, therefore, that the most ‘popular’ online recipes are those that are quick and easy and do not require advanced laboratory equipment, such as recipes inspired by *The Poisoner’s Handbook*. When a member started a discussion about biological weapons, encouraging others to ask him questions, another replied,

Our *mujāhid* brother ... are we able to manufacture them with simple equipment and available substances, and will they harm the person who manufactures them, and how

²⁹⁹ Abū al-’Usūd, “التلوث الإشعاعي” (Radioactive pollution), publisher unknown (file modified on 14 August 2005), downloaded from *Muntadayāt al-firdaws al-jihādiyya*, 5 September 2006,

<http://www.alfirdaws.org/vb/showthread.php?t=15942>.

³⁰⁰ See for example, “سین... سبحان الله بذنور الزر”, thread started by ‘hamoda’ on *Muntadayāt al-firdaws al-jihādiyya*, 9 July 2006, www.alfirdaws.org/vb (accessed 10 January 2007). One forum member says, “I advise you, my brother, to search in Google to learn about this substance and its importance and risk.” Another member later reports, “this is what I found from Google”.

far away are they able to harm our infidel enemies? ... Please teach us in a very simplified way, because we are not trained in biology.³⁰¹

This is also confirmed by the low interest in discussing biological weapons on the forum. In the autumn of 2006, a member attempted to start an “online lesson on biological weapons” at least twice, without getting much response.³⁰² On 9 November 2006, another member posted on a forum a lengthy English text on Biological Weapons originally written by an American professor in Microbiology.³⁰³ He asks forum members to translate it, but the only response he gets is a request to put English-language messages in the English part of the forum.

A commonly asked question is how to obtain the required chemicals or ingredients. Forum members often enquire about the commercial name of chemicals, and what kinds of stores to obtain them from. Due to a relatively high security awareness in these forums, the requests are seldom country- or region-specific, but there have been a few exceptions, with members stating they are from Palestinian areas or the Arab Peninsula.³⁰⁴ Operational security in connection with obtaining chemicals has also been an issue of discussion. One forum member, enquiring where to get hydrochloric acid, stated “... I’d like to avoid chemical stores and their questions on what you want with that [chemical], and so on.” Subsequently, other members suggested that he obtain some information on ceramics and glazing in order to use that as an excuse.³⁰⁵ In another discussion, a forum member sought help to set up a laboratory without raising suspicion, saying: “I have some theoretical knowledge of chemistry and I would like to develop it in practice, but buying the equipment requires me to sign papers, and I cannot ask someone else, because no one wants to get involved. Then, I will be discovered.” He received several suggestions about how to conceal his intentions, for example by starting a laboratory for perfumes or chemical fertilizers, or enrolling in a scientific university.³⁰⁶

³⁰¹ “دورة في السلاح البيولوجي”, thread started by ‘modjahede’ on *Muntadayāt al-firdaws al-jihādiyya*, 8 November 2005, www.alfirdaws.org/vb (accessed 10 January 2007).

³⁰² See “دورة في السلاح البيولوجي الاخر مرة” (17 June 2006); and “دورة في السلاح البيولوجي مهداة الى شيخنا الزرقاوي رحمه الله” (20 October 2006), posted by ‘modjahede’ on *Muntadayāt al-firdaws al-jihādiyya*, www.alfirdaws.org/vb (accessed 11 January 2007)

³⁰³ “CHAPTER XV, ADDENDUM: BIOLOGICAL WEAPONS; MALIGNANT BIOLOGY”, posted by ‘al-Fadā’i al-Yamānī’ on *Muntadayāt al-firdaws al-jihādiyya*, 9 November 2006. The text is available in “Microbiology 101 Internet text”, updated 3 January 2000, <http://www.slic2.wsu.edu:82/hurlbert/micro101/pages/101biologicalweapons.html> (accessed 23 January 2006).

³⁰⁴ See for example, “السلاح الكيماوي”, thread started by ‘Azzām2000’ on *Muntadayāt al-firdaws al-jihādiyya*, 5 July 2006, www.alfirdaws.org/vb (accessed 22 September 2006).

³⁰⁵ “السلاح الكيماوي”, thread started by ‘Azzām2000’ on *Muntadayāt al-firdaws al-jihādiyya*, 5 July 2006, www.alfirdaws.org/vb (accessed 22 September 2006).

³⁰⁶ “كيف أجهز مختبرا دونلفت الأنتظار؟ الرجاء المساعدة”, thread started by ‘sajy_79’ on *Muntadayāt al-nuṣra al-jihādiyya*, 25 Oct 2006, www.alnusra.net/vb (accessed 19 Nov 2006).

Safety precautions have also been a topic of discussion, especially when dealing with biological weapons. In a discussion started on al-firdaws in November 2005, for example, several participants voiced concerns regarding the safety risks involved in the production of biological agents. One forum member regarded the subject as “very dangerous” due to the lack of isolation and containment procedures. Further, he stated: “In case of a mistake or leak, it will become extremely dangerous for all Muslims in the area. It is not like an explosion, which is limited to the person working with it only.”³⁰⁷ The apparent unfamiliarity with biological agents, and the perception of them being deadly and uncontrollable, may explain why the online interest in biological agents appears to be much less than in chemical ones.

One of the most common discussion topics remains the question of how to deliver or weaponize the agents. From July-November 2006, for example, there was a lengthy discussion on al-firdaws about how to manufacture and weaponize ricin. Significantly, one of the forum participants claimed to have already manufactured ricin and to have conducted experiments with its delivery. When a member wondered whether adding acid to ricin would produce ricin in gaseous form, he replied, “I poured concentrated sulphuric acid over the ricin poison but nothing happened, and no gases were produced, only the ricin turned brown.”³⁰⁸ Although displaying a rather shallow knowledge of chemistry, this is nevertheless a rare example of a delivery method actually being tested and reported on the forum. For the most part discussions of delivery methods remain theoretical, based on common knowledge, past cases or information found on the Internet. By contrast, the discussions about regular explosives more often have the shape of “on-line tutorials” where users conduct experiments and consult other members with their problems. Occasionally, forum members may also seek to discuss more untraditional solutions such as delivering chemical weapons using remote-controlled model aircrafts.³⁰⁹ A more common suggestion is to weaponize the agent by simply mixing it with explosives, but no specific ‘recipes’ for this seem to have been developed, and forum members have also expressed doubts with regards to the efficiency of this method. Interestingly, the use of chlorine in Iraqi truck-bombs during the first half of 2007 seems not to be a topic of discussion, although it has received wide coverage in the media. One should

³⁰⁷ “دورة في السلاح البيولوجي”, thread started by ‘modjahede’ on *Muntadayāt al-firdaws al-jihādiyya*, 8 November 2005, www.alfirdaws.org/vb (accessed 10 January 2007).

³⁰⁸ “سين... سبحان الله بذور الر”, thread started by ‘hamoda’ on *Muntadayāt al-firdaws al-jihādiyya*, 9 July 2006, www.alfirdaws.org/vb (accessed 10 Jan 2007).

³⁰⁹ “سؤال مهم”, thread started by ‘saifo allah’ on *Muntadayāt al-firdaws al-jihādiyya*, 8 June 2005, www.alfirdaws.org/vb (accessed 10 Jan 2007).

keep in mind, however, that none of the Iraqi jihadi groups have so far admitted to using such bombs. As far as online jihadists are concerned, the alleged ‘chlorine bombs’ are therefore viewed as part of a propaganda campaign to tarnish the reputation of the Islamic State of Iraq, rather than being a tactic currently employed by jihadists.³¹⁰

In at least a few cases, the forum members have been encouraged to think in more realistic ways when it comes to selecting and delivering CBRN materials. In one instance, a member who proposed spreading ricin by placing the powder in the air-conditioning vents of large buildings, was given the following advice: “My brother, don’t get carried away ... my suggestion to you is to select a target, find its mailing address and write a threatening letter, then you put rat poison in the envelope and send it. A small step for you, but a large step for the Muslims.”³¹¹ Although such examples are rare, there seems to be an increased awareness among jihadists that small-scale but feasible operations are better than large-scale operations with slim chances of succeeding. As one jihadi forum member recently put it: “a hand grenade that explodes in one of New York’s streets, is better than a nuclear bomb capable of destroying half of New York that does not explode!”³¹²

5.4.5 The CBRN interest of the al-Qaeda sympathizers

Generally, the interest in CBRN materials among al-Qaeda’s internet sympathizers is very low. This is reflected by both the number of CBRN manuals available, the number of CBRN-related threads in a forum, and lists of the most viewed topics. An exception to this is the topic of nuclear weapons, which seems to be very popular, but where forum members also display the greatest lack of knowledge. The topic of radiological weapons or “dirty bombs” is, by comparison, surprisingly marginal. The current production of new CBRN material is also low. When a formula is posted in a forum, it is usually taken from one of the older manuals, and many of the manufacturing techniques are fundamentally similar to recipes found in *the Poisoner’s Handbook*. This indicates that there is little interest in testing and developing the formulations, nor in developing one’s own skills.

The various CBRN manuals that are available online can be seen as not only a reflection of the CBRN interest of the al-Qaeda sympathizers, but also the interest of the other ‘layers’ of

³¹⁰ See for example, “’مـاراثون’ الكذب على دولة العراق الإسلامية”، thread started by ‘Mujāhidat al-šām’ on *šabakat al-’ihlāṣ al-’islāmiyya*, 15 May 2007, <http://www.alekhlaas.net/forum/showthread.php?t=59489> (accessed 12 July 2007).

³¹¹ “سين...سيحان الله يذور الر”، thread started by Hamoda on *Muntadayāt al-firdaws al-jihādiyya*, 9 July 2006, www.alfirdaws.org/vb (accessed 10 Jan 2007).

³¹² “رسالة عاجلة للخلايا الجهادية المباركة”، thread started by ‘ibn al-tanzīm’ on *šabakat al-’ihlāṣ al-’islāmiyya*, 1 July 2007, www.alekhlaas.net/forum/ (accessed 2 July 2007).

al-Qaeda, as it appears that several of the manuals are based on notes from training camps or courses. However, since the origin of the online manuals is most often dubious, it is hard to attribute them to a particular ‘layer’ of al-Qaeda. Nonetheless, it is apparent that the contents of the manuals correspond to the CBRN interest of the al-Qaeda network as a whole. Although there has been a certain development from mere ‘assassination handbooks’ towards handbooks of ‘mass destruction’, it needs to be emphasized that while the *intention* of the manual may have changed, the quality of the formulae remains very low, and the manuals usually lack key information on how to effectively weaponize the CBRN materials. A possible exception is The Unique Invention, which remains one of the most specific examples of ‘CBRN innovation’ within the al-Qaeda network as a whole, albeit on a technologically crude level. It should be stressed that the device represents low-end, and not ‘catastrophic’ use of CBRN materials, but on the other hand, even a low-end attack might have a considerable psychological effect.

5.5 Summary of the main findings

In the previous subchapters, I have sought to describe the history of al-Qaeda’s quest for non-conventional weapons as reflected by statements and activities attributed to the various levels of the network. I will now summarize the findings by answering the three sub-questions defined at the outset of this analysis: 1) what kinds of CBRN weapons are al-Qaeda interested in? 2) how important are CBRN weapons in relation to other weapons and tactics? 3) how has al-Qaeda’s interest in CBRN weapons evolved?

5.5.1 What kinds of CBRN weapons are al-Qaeda interested in?

The first thing that can be noted is that al-Qaeda seems to make a distinction between WMD on one hand, and crude CBRN materials and devices on the other. On the strategic and conceptual level, al-Qaeda leaders have often used the term ‘weapons of mass destruction’ (*asliḥa al-ḍamār al-šāmil*), referring to state-level chemical, biological or nuclear weapons with, literally, capabilities of mass destruction. In contrast, crude, chemical and biological agents meant for tactical use are often referred to in al-Qaeda manuals as ‘poisons’ (*al-sumūm*) or ‘poisonous gases’ (*al-ġāzāt al-sāmma*). Sometimes they are also labelled *ša’biyya* (‘popular’ or home-made). With regards to the al-Qaeda network’s actual CBRN activities, there appears to have been theoretical research into weapons-grade chemical, biological and radiological materials, as well as into nuclear weapons. However, when it comes to acquisition attempts, possession and use, in a vast majority of cases the agents have been crude and relatively easily

obtainable, such as ricin, hydrogen cyanide, chlorine and so-called “rotten meat poison” thought to be botulinum toxin. The empirical cases that have been reviewed, the material and ‘laboratories’ discovered in Afghanistan and Iraq, and the discussions taking place on the Internet all convey the impression of a relatively elementary level of technical expertise in the field of CBRN.

Although there have been various reports stating that al-Qaeda attempted to buy nuclear material in the nineties, and possibly recruited skilled scientists, it appears that al-Qaeda central have not dedicated a lot of time or effort to developing a high-end CBRN capability. This corresponds to Abū Walīd al-Maṣrī’s account of the discussions within al-Qaeda’s Shura Council. Al-Qaeda central never had a coherent strategy to obtain CBRN: instead, the members were divided on the issue, and there was an awareness that militarily effective weapons were extremely difficult to obtain. Some members, however, believed that al-Qaeda should pursue a ‘primitive’ CBRN capability. Al-Maṣrī observed:

Another group [within the Shura council] believed that this type of weapons, if bin Laden could obtain them, would be tactical by virtue of its primitiveness and weak destructive capability. However, *they will continue to call it ‘weapons of mass destruction’ to create fear* [emphasis added].³¹³

5.5.2 How important are CBRN weapons in relation to other types of weapons and tactics?

The review of existing sources shows that *all* levels of the al-Qaeda network have displayed a certain interest in exploring and using non-conventional weapons to obtain their goal. However, there is little doubt that the importance of CBRN weapons has by no means surpassed the importance of conventional weapons and tactics, such as simultaneous explosions and ‘suicide operations’. CBRN weapons are not a dominant topic in al-Qaeda’s official discourse: on the contrary, bin Laden has stressed on various occasions that it is the faith of the Muslims, as demonstrated through martyrdom operations, that will ensure the ultimate victory over the technologically superior, but spiritually weak West. While this should be interpreted as propaganda, and not necessarily as indicative of al-Qaeda’s military strategy, it is an undeniable fact that also the majority of al-Qaeda’s planned and executed operations have relied on conventional modes of attack. This is true of the central, affiliate and local levels of the network. As for the sympathizers, they also appear to be predominantly concerned with conventional explosives and weapons in their discussions. The CBRN

³¹³ al-Maṣrī, “قصة الافغان العرب من الدخول إلى أفغانستان الى الخروج مع طالبان”.

manuals available on jihadi web pages reflect a certain effort to spread CBRN technology, but the technical level of these documents is generally very low. Also, the CBRN manuals appear to be drowning in all the other tactical training material being published in the same forums.

5.5.3 How has al-Qaeda's interest in CBRN weapons developed?

Reuven Paz argued in a 2006 article that after 9/11, “al Qaeda’s interest for WMD has increased exponentially.”³¹⁴ When judging from al-Qaeda’s actual statements and activities, however, there is very little evidence to support this claim. When analyzing al-Qaeda’s statements, one can argue that there has been a certain ‘shift’ in attitude from a defensive towards a more offensive use of CBRN weapons against the West. This is most clearly illustrated by Sheikh Nāṣir bin Ḥamd al-Fahd’s *fatwā* from 2003, which gives religious legitimization to using weapons of mass destruction as a first-strike weapon against the United States. Based on the small amount of quotes, however, it is hard to draw any firm conclusions. Al-Fahd’s *fatwā* could simply be reflective of the general tendency since 2003 to take a more hostile stance to the US, caused by the loss of Afghanistan as a permanent base, and the invasions of Afghanistan and Iraq. I would argue that the Sheikh’s *fatwā* should not be interpreted as a sign that al-Qaeda now places greater emphasis on CBRN weapons than before. Rather, it can be seen as a confirmation of al-Qaeda’s expressed desire to carry out “destructive attacks” on the US³¹⁵, whether with conventional or unconventional methods.

To summarize, the first part of this thesis has argued that an interest in CBRN materials has been present on all levels in the al-Qaeda network. However, this interest is relatively low, and it has been concentrated on developing a crude CBRN capability. In the next part of the thesis, I will analyze *why* al-Qaeda has not dedicated more time and resources to pursuing a CBRN capability. This will be performed by discussing three hypotheses that have been formulated based on existing literature: CBRN is not deemed necessary to achieve the goal; al-Qaeda does not have the necessary ‘emotional attraction’ to CBRN; or organisational/structural factors prevent innovation although there is an interest in it.

³¹⁴ Reuven Paz, “Global Jihad and WMD: Between Martyrdom and Mass Destruction,” *Society for Internet Research*, 25 September 2005, <http://www.sofir.org/sarchives/005026.php> (accessed 29 Aug 2007).

³¹⁵ ‘Ādam Yahyā Ġadan, “مطالب مشروعة” (Legitimate demands), *al-Ṣaḥāb* (May 2007), downloaded via *Ṣabakat al-‘aḥbār al-‘ālamīyya*, <http://www.w-n-n.net/showthread.php?t=26057> (30 May 2007).

6 Explaining the lack of CBRN innovation

*“Terrorist devices will be innovative in their simplicity”*³¹⁶

- Bruce Hoffman

Why is there a lack of CBRN innovation within the al-Qaeda network? This question is often answered by saying that “CBRN weapons are too difficult to obtain”, “al-Qaida does not have the necessary capabilities”, etc. However, this does not take into account the various internal driving factors behind CBRN terrorism or innovation. In my opinion, the al-Qaeda network is an interesting case analytically because several factors are present that would theoretically promote CBRN innovation. As the previous chapter has shown, all levels of the network have also considered the option of using CBRN materials to achieve their goals. In spite of this, however, CBRN innovation has only taken place to a very limited degree. In this chapter, I will attempt to identify the most important explanatory factors why al-Qaeda has not been more innovative in the field of CBRN weapons. This is performed by discussing the validity of three hypotheses.

6.1 CBRN weapons are not necessary to obtain the goal

Al-Qaeda’s lack of efforts in the field of CBRN can be explained by arguing that CBRN weapons are not viewed as necessary to obtain al-Qaeda’s goals, and they are not defined as having a central role in al-Qaeda’s strategy.

Some case studies have shown that groups who pursued CBRN weapons had a goal that required the use of CBRN weapons. The Covenant, Sword and Arm of the Lord (CSA) had as a goal to hasten the return of the Messiah by bringing on certain catastrophic events predicted in the Bible. Similarly, the goal of the environmentalist organization R.I.S.E. was to eradicate all of humankind except a small group of survivors.³¹⁷ These goals were of such a nature that they could not be achieved by using conventional weapons.

Although al-Qaeda’s goal is disputed and somewhat vague, I would argue that it is of a quite different nature than those mentioned above. As stated previously, in this thesis I have defined the main goal of the al-Qaeda network as that of disengaging the United States from influencing the Middle East and other Muslim countries, as well as arousing the Muslim

³¹⁶ Bruce Hoffman, “Terrorist targeting: Tactics, trends and potentialities”, *Terrorism and Political Violence* Vol. 5, Issue 2 (1993).

³¹⁷ For more on these cases, see Tucker, *Toxic Terror*.

nation to fight against Western ‘oppression’. In order to achieve this goal, al-Qaeda has so far pursued a strategy of carrying out violent attacks against the United States, its allies and interests. The label ‘global guerrilla warfare’ is in many ways descriptive. Although attacks should preferably be spectacular, and preferably be carried in the ‘enemy’s homeland’, the network has shown a willingness to ‘downsize’ their operations for the sake of feasibility; for example, by attacking softer targets rather than ‘hard’ ones, by attacking American interests in the third world, rather than in the United States, and by making wide use of low-tech tactics such as suicide operatives rather than surface-to-air-missiles.

On the one hand, the use of CBRN weapons against the US, even ‘catastrophic’ ones, does not seem to contradict this strategy. It could also be argued that the use of catastrophic CBRN weapons would be preferable to using conventional means, because it could make al-Qaeda achieve its goal faster. According to my analysis, however, there is nothing in al-Qaeda’s present goal or strategy that has *required* the use of CBRN weapons as opposed to conventional ways of causing mass casualties. On the contrary, al-Qaeda’s strategy of ‘global guerrilla warfare’ has shown great flexibility when it comes to the choice of tactics. This may partly explain why there has not been a strong push for CBRN innovation within the network.

If CBRN weapons were not a central part of al-Qaeda’s strategy, how do we explain the ‘poison courses’ that were systematically given to recruits in the camps in Afghanistan? As illustrated by the cases of Bourgass and Benchellali, the courses may even have served as an inspiration for CBRN plots in Europe. However, this can hardly be called an organized attempt by al-Qaeda to spread CBRN technology, because the knowledge taught was apparently very crude, and the courses were given alongside other courses on guerrilla warfare tactics. Also, of the several hundred trainees who took these ‘poison courses’, only very few actually tried to use this knowledge afterwards. At the same time, there were individuals who completed poison courses who afterwards chose to attack with conventional explosives.³¹⁸

As I have argued, CBRN weapons do not play a central part in al-Qaeda’s strategy. However, this is not a sufficient explanation for clarifying why al-Qaeda has not innovated more in the field of CBRN. There are several examples of groups that have pursued CBRN weapons, although they did not have a goal or defined strategy that demanded the use of CBRN weapons.³¹⁹ Clearly there are other factors than the purely ‘rational’ ones that can contribute

³¹⁸ For example Ahmed Ressay, see “United States of America v. Mokhtar Haouari”.

³¹⁹ See Tucker, *Toxic terror*.

to explaining why al-Qaeda has not pursued CBRN capabilities, as opposed to conventional capabilities, more actively.

6.2 Lack of ‘emotional attraction’ to CBRN

The ‘irrational factor’ is frequently mentioned as the most important explanatory factor why a certain group chooses to pursue CBRN weapons. As Dolnik has concluded:

The presence of the non-rational component such as the expressive emphasis to innovation, overly high ambitions in the operational realm, and ideological or expressive attachment to a particular type of weapon or technology serves as the strongest and most universal pre-indicator of the propensity of a terrorist group to innovate.³²⁰

In order to pursue the option of CBRN weapons, the group, or key leaders within the group, have to have a certain ‘emotional attraction’ to this particular weapon or tactic. The case of Aum Shinrikyo is used as a clear example. Aum Shinrikyo’s powerful leader, Shoko Ashahara, seemed to be obsessed with the prospect of developing high-tech weapons, and CBRN weapons in particular.

Based on the reviewed source material, it appears that al-Qaeda does not display such an attraction on any level in the organization. Osama bin Laden himself has barely ever made public statements about CBRN weapons, except when answering direct questions from journalists, which he has done in about five interviews given between 1998-2001.³²¹ In these statements he emphasizes that Muslims have the right to obtain WMD to defend themselves, and although he stresses that it is a “religious duty” to obtain them, his statements appear motivated by political grievances, not religious fanaticism. This interpretation also corresponds better with Abū Walīd al-Maṣri’s account that claimed bin Laden did not support the idea of obtaining WMD during the Shura Council discussions, because he did not regard them as necessary to defeat the United States.

Other al-Qaeda leaders, in particular Muḥammad ‘Āṭif, seemed to be more attracted to the idea of pursuing CBRN weapons. However, it does not appear that anyone within al-Qaeda central was particularly obsessed with CBRN weapons *at the expense of other tactics*, if other tactics were found to be more feasible. This was illustrated in the case of Jose Padilla, whose

³²⁰ Ibid., 175.

³²¹ Osama bin Laden answers questions about al-Qaeda’s attitude towards non-conventional weapons in 5 out of 17 media interviews given between 1993-2002. The count is based on Thomas Hegghammer’s “Dokumentasjon om al-Qaida - intervjuer, kommunikører og andre primærkilder, 1990-2002” *FFI-Report* no. 2002/01393 (2002).

plan to explode a ‘dirty bomb’ in the US was denied by Khalid Sheikh Muhammad because he thought a conventional attack would have a greater chance of succeeding.

On the regional level, it is not easy to find arguments for al-Qaeda leaders displaying an emotional attraction to CBRN materials. Although ‘poison laboratories’ have been connected to Abū Muṣ‘ab al-Zarqāwī’s network in Iraq, he is probably more notorious for his ‘tactic’ of decapitating hostages and publishing a video of it afterwards. And while Abū Ḥamza al-Muhājir issued a communiqué in which he encouraged experts in non-conventional warfare to come to Iraq to try out their “biological and radiological weapons” on American bases, he also called for, in the same sentence, experts within administration and electronics. The chlorine bombs in Iraq appear to have been the result of a competitive environment (increasing the need to innovate in order for the group to stand out from the rest) and relatively easily obtainable chemical materials, but not an emotional attraction to CBRN materials among Sunni insurgents *per se*. This is strengthened by the fact that the chlorine-bomb campaign was relatively insignificant and short-lived: 11 chlorine attacks in six months is not very many when bearing in mind that the average number of *daily* attacks in Iraq in this period was estimated to be around 150.³²²

On the local level, it can be argued that those individuals who sought to use CBRN materials did so out of an ‘emotional attraction’ to such weapons. According to witnesses, for example, Menad Benchellali came back from Afghanistan “obsessed” with ricin poison, and apparently decided to manufacture it on his own, even though the cell he was part of was apparently considering more conventional methods. In the other cases, it is hard to determine exactly what was the motivation for using CBRN materials. In most of the plots revealed in Europe, however, there seems to have been no strong emotional attraction to CBRN materials involved at all. In some plots, there seems to have been an initial plan to use non-conventional weapons, but it was abandoned out of practical reasons. In other plots, perhaps there was an emotional attraction to a certain tactic, but not to CBRN materials. It is a paradox that in cells with highly educated members, such as in the Glasgow airport bombings in 2007, the cell still chose to carry out attacks with extremely crude tactics.³²³ In order to explain why, an in-depth

³²² The estimated number of attacks in Iraq varies from source to source, depending on how one defines an ‘attack’. This estimate is based on “Iraq Index: Tracking Variables of Reconstruction & Security in Post-Saddam Iraq”, The Brookings Institution, 15 November 2007, <http://www.brookings.edu/saban/~media/Files/Centers/Saban/Iraq%20Index/index.pdf> (accessed 19 November 2007).

³²³ See for example, Bilal Abdullah, “Bomb plot: Arrests and releases”, *BBC News* (5 October 2007), <http://news.bbc.co.uk/1/hi/uk/6264230.stm> (accessed 19 December 2007).

study of several local cells is needed, which there has not been room for in this thesis that has only considered cells that have pursued CBRN materials. It is obvious, however, that the cases examined here are the exception rather than the rule.

While some of the Internet sympathizers might be particularly interested in CBRN materials and weapons, the statistics from message topics and the amount of instruction manuals available indicates that there is no particular ‘obsession’ with CBRN weapons among the Internet sympathizers as a group.

In sum, the emotional attraction to CBRN weapons that might have been displayed by certain individuals on various levels within the network is not sufficient to influence the network as a whole, and it does not change the general observation that al-Qaeda has a flexible attitude towards the choice of tactics, and that there is no particular ‘obsession’ with CBRN weapons on any level. The question is whether there perhaps is an emotional attraction to other types of tactics. I will discuss this further in relation to al-Qaeda’s organizational structure.

6.3 Organizational structure

Even though there was an emotional attraction to CBRN weapons from certain individuals in the network, this did not translate to the network as a whole. Similarly, the *lack* of such an attraction has not prevented certain elements within the network pursuing CBRN capabilities. The reason for this, I argue, can be found in the organizational dynamics of the al-Qaeda network.

The organizational dynamics of al-Qaeda: Promoting or preventing innovation?

Al-Qaeda central is not a strong hierarchy with bin Laden as the supreme and all-powerful leader. According to Maşri’s account, Osama bin Laden was not particularly fond of Muḥammad ‘Āṭif’s ‘WMD programme’, though it was nonetheless pursued. Al-Maşri even hints that bin Laden, while not wanting to create an open conflict with Muḥammad ‘Āṭif, instead let him pursue it, but at the same time, silently thwarted it. While it is hard to find other sources that can confirm al-Maşri’s speculations there are, at least, several other sources confirming that the al-Qaeda leadership indeed had internal conflicts and disagreements.³²⁴ There are also several sources confirming that al-Qaeda continued to plan conventional

³²⁴ See for example, *Cracks in the Foundation: Leadership Schisms in al-Qa’ida from 1989-2006*, http://ctc.usma.edu/aq/pdf/Harmony_3_Schism.pdf (accessed 19 November 2007).

attacks, even after 11 September. This might explain why the CBRN efforts of al-Qaeda central ended up being rather half-hearted.

The networked structure of al-Qaeda should theoretically promote innovation in at least two ways. First, the decision-making process of al-Qaeda was not strictly top-down, but allowed any militant islamist to design his or her own operational plans, and then present them to senior leaders for approval. Second, when using a broad definition of the al-Qaeda network, which I have chosen to do in this thesis, individuals do not even have to present their plans for 'approval', they can simply decide to act on their own in al-Qaeda's name. With this wide pool of potential tactical planners, why have the majority of al-Qaeda attributed attacks been carried out by 'conventional' methods?

It can be argued that in the first case (where operatives present their plans to senior al-Qaeda members), al-Qaeda central could simply have dismissed the plans that they did not regard as feasible. This is what apparently happened to Jose Padilla's "dirty bomb" proposal to Khalid Sheikh Muhammad. As for the Dhiren Barot case, it is not clear whether his plan of making a "dirty bomb" out of smoke detectors was approved by senior al-Qaeda members or not, although he allegedly went to Pakistan for this purpose. In any case, it is hard to draw any conclusions about whether innovative CBRN operations were rejected by al-Qaeda central without actually knowing how many such proposals were made in the first place. Details of this have only been revealed in a few, specific cases.

It is easier to analyze the second option, namely when operatives act in al-Qaeda's name but without direct funding and earlier approval from al-Qaeda central. Why have there not been more attempts to use CBRN materials or other innovative tactics by this layer of the al-Qaeda network? According to Jones' theory, this layer should be 'innovative improvisers' with highly innovative skills but low capability. What we see instead, however, is that the method of choice is often highly 'traditional'. This could be explained by the factor of 'personal choice', but over time, and after a large number of cases, one would still expect to see a certain variation. I would argue that the case of the al-Qaeda network shows that a networked structure does not necessarily promote innovation, as Jones has argued, but it might also simultaneously *prevent* innovation.

First of all, al-Qaeda is a global, dispersed network operating all over the world. It is therefore not pushed to innovate by immediate battlefield needs or countermeasures, because it could simply move its operations to a different country. This might be one explanation why the network has not been more innovative.

Another important factor may be that in a loose, networked structure, there is a stronger need on the lower levels of the network to carry out operations that can immediately be identified with the al-Qaeda ‘brand’. Therefore, the lower levels are not necessarily more prone to innovation as Jones has argued. On the contrary, the networked structure promotes an adherence to ‘traditional’ al-Qaeda modes of attack, such as plane hijackings and simultaneous bomb explosions targeting buildings or commuter traffic.³²⁵ The networked structure also promotes a trend for younger and perhaps more ‘impatient’ operatives, who prefer immediate results rather than long-term planning.³²⁶ This means that the tactics to be used are, to a larger degree, determined by immediate capabilities and available means rather than capabilities that it takes long time to acquire. According to this alternative explanation, the four cases of CBRN plots carried out by al-Qaeda locals are therefore not confirmations of Jones’ theory, but are rather seen as exceptions that may be explained by the presence of other factors, such as an ‘emotional attraction’ to CBRN materials.

³²⁵ Such traditional modes of attack appear to be the trend in Western Europe. See Petter Nesser, “Chronology of Jihadism in Western Europe 1994 – 2007; planned, prepared and executed terrorist attacks”, *forthcoming*.

³²⁶ Nesser, “Jihadi training in Europe”.

7 Conclusion

What is the nature of al-Qaeda's interest in CBRN weapons, as reflected by statements and activities on various levels within the network between 1996-2006? My answer to the research question has been two-fold: first, I have argued that by looking at statements and activities at various levels within the al-Qaeda network, it becomes clear that the network's interest in using unconventional means is in fact much lower than commonly thought. Actual efforts have been concentrated on crude and easily obtainable CBRN materials, not on developing actual warfare agents, although the option has been researched at least on a theoretical level. The analysis shows that separate quotes from al-Qaeda leaders, such as Nāṣir bin Ḥamd al-Fahd's *fatwā* about WMD, should not be interpreted as indicative that al-Qaeda prefers CBRN weapons to other types of weapons, but rather as a reflection of al-Qaeda's stated desire to carry out 'mass destructive' attacks against the United States with whatever means available.

After having established the nature of al-Qaeda's interest in using CBRN means, the next part of the answer to the research question is to explain why al-Qaeda has not shown more innovation in this field. The al-Qaeda network clearly lacks some of the characteristics typical of past 'CBRN terrorists', such as an ideology or strategy that clearly defines the use of CBRN materials; or an 'expressive attachment' to this particular type of weapon. This might be used to argue why Jones' argument (that al-Qaeda's networked structure promotes innovation) does not fit very well with the empirical case study of al-Qaeda: there is simply not an 'ideological environment' to push for innovation within the field of CBRN weapons. I would argue, however, that al-Qaeda's networked structure itself also might prevent innovation in tactics, a factor which has not been discussed in Jones' article: first of all, the global nature of the network makes mobility an alternative to innovation: instead of innovating new tactics to evade countermeasures, al-Qaeda could simply move its tactics to a different part of the world where such countermeasures are not yet in place. Al-Qaeda's main enemy, the United States, is represented all over the world through embassies, businesses and other interests. Secondly, al-Qaeda's loose organizational structure does not only increase the pool of potential operational planners, as Jones argues, but it also increases the need for carrying out operations that can immediately be identified with the al-Qaeda 'brand'. Further research is needed, however, to test the validity of these new hypotheses. In particular, I believe it would be useful to conduct a comparative study of cases where CBRN materials

were involved, and cases where traditional tactics were used, in order to better understand why al-Qaeda seems to adhere to traditional modes of attack.

There is little doubt that al-Qaeda still has a strategy of staging spectacular mass-casualty attacks, but there are no indications that al-Qaeda views CBRN materials as the only possible type of weapon with which to pursue this strategy. In my opinion, this makes the al-Qaeda network a more resilient threat than any ‘superterrorist’.

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All databases were accessed on 20 December 2007.