

SECTION TWO

A CONTEXT FOR RISK: NON-STATE USE AND MICRO-PROLIFERATION OF WEAPONS OF MASS DESTRUCTION

Risk and Utility: A Non-State Model

From 2001, if patterns and trends of non-state activities were established on the basis of the preceding historical record, the correlation would simply reflect there are fewer terrorist attacks and that they are becoming more lethal. Whilst the data and the inverse relationship between frequency and lethality is not in contention, neither is the causative relationship between the two factors supported by any empirical data.¹ There are numerous religious, geographical, cultural and political factors which influence non-state organisations in their actions. Establishing the impact increasingly lethal technologies may have in defining the lethality of attacks, most particularly those involving WMD technologies, depends on an understanding of the capability of these unconventional technologies.

The hypothesis that non-state attacks will continue to become more lethal through the use of improved technological innovation, such as the use of CBR capabilities, may not have the inevitability and immutability that is often loosely

¹ See Department of State, *Patterns of Global Terrorism* for transnational trends in terrorist activity. Also of note, *2000 Monterey WMD Terrorism Chronology*, listed 687 incidents perpetrated since 1900 with 175 of these having occurred in 1999, representing over 25 percent of the total. While this appears as a significant increase, it is difficult to attribute it to one specific cause. Interestingly, the increased reporting of CBR incidents may simply be attributable to more efficient collection means (whilst this may be a factor, it is unlikely to account for the variation in targeting and greater proclivity for more lethal agents). Additionally, the proliferation of 'copy cat' type incidents has become rampant, particularly within the United States where in 2000 there were approximately 400-500 anthrax hoaxes. It is anticipated that the figure for 2001 will be in the vicinity of thousands as a result of the global awareness of the anthrax scares in the United States late in the year – bearing out the increasing rate of incidents. M. Nemeth, 'Anthrax hoax becomes copycat trend', *Associated Press*, (accessed 21 March 2001), <http://www.news-press.com/news/today/010310anthrax.html>. One significant factor in the increased reporting of CBR incidents, which is indirectly a function of increased societal awareness of the issue, is the inclusion of many low end spectrum incidents in the WMD category. This suggests that without a standardised collection, classification or categorisation process, the data remains of only limited value and cannot be applied to projections of activity or patterns, particularly when applied to higher end spectrum activity that involves the use of chemical warfare agents and biological agents such as plague and anthrax.

attributed to assessments. Increases in the preparedness of non-state actors to use ultra-violence do appear to suggest a propensity towards the use of capabilities such as CBR WMD. Yet even if this were the case, when considered against factors of frequency, capability and potential, the prospect of use would still be assessed as a low probability, albeit one of potentially high consequence. The paucity of reporting on CBR activities, particularly on use, threatened use and development of unconventional capabilities, does not reflect an increasing linear development and in the majority of cases, there is no established relationship between indications in current trends, types of use and a developing escalatory capacity.

As a consequence of this indeterminateness in the analytical process, establishing clear timeframes of development, of when a CBR WMD attack will occur, or critically, which organisations might attempt to develop and use these capabilities, could only be described as a 'leap of faith'. The development therefore of strategies and counter-measures against ill-defined and inconclusive CBR threats appears to be without context.² Widely held perceptions within the public, media and government, are in the main derived from visceral fears of a catastrophic attack from the potential use of a CBR WMD capability.³ This awareness, when supplemented by graphic media coverage of terrorist incidents has contributed to a perception of impotence, uncertainty and vulnerability. Despite these perceptions, however, mass casualty terrorism, while increasing, is by no means a new phenomenon, which is highlighted in the trends in Table 1 between casualties and terrorist attacks over the last century.

² Statement by J.V. Parachini before the United States House Subcommittee on National Security, Veteran Affairs and International Relations, *Combating Terrorism: Assessing Threats, Risk Management and establishing Priorities*, Washington DC., 26 July 2000, p 4.

³ In 1999, the Chicago Council on Foreign Relations surveyed more than 1500 people to ascertain their perceptions of trends in the global threat and their own perceptions of increasing risks. The number one threat was transnational terrorism and the second threat was the terrorist use of chemical and biological agents. While the social and political climate that followed the attacks against the United States on 11 September 2001 may well have increased the enmity people feel towards acts of terrorism, yet discerning public views in which is the greater, conventional and unconventional terrorist threats, is somewhat of a moot point. The conclusion, now that concerns are heightened, is there are strong expectations for pre-emption by governments in dealing with these threats and that people now know that these types of weapons and actions now as no longer confined to the movie theatres. Chicago Council on Foreign Relations, *Survey Report*, United States, 1999, (accessed 10 December 2000), www.ccf.org/publications/opinion/AmPuOp99.pdf.

Analysis of WMD activity based on limited, speculative and often uncorroborated data has resulted in a largely theoretical debate amongst analysts. This debate has only just begun to challenge many of the existing analytical paradigms applied to even conventional weapons use by non-state entities. Increasingly, analysis of these non-state threats demonstrates a wide dichotomy between perception and reality. The reality is more nuanced and complex than is suggested by current perceptions, in particular the ease and utility of developing a WMD capability and the use of CBR agents.⁴

Table 1 – Top Ten Transnational Terrorist Incidents by Fatalities

Date	Incident	Deaths
2001	World Trade Centre and Pentagon Attacks	In excess of 3000 deaths
1985	Air India Flight	328
1998	Nairobi/Kenya	291
1988	Pan Am 103	278
1983	Marines/Beirut	241
1989	UTA Flight	171
1995	Oklahoma	164
1925	Cathedral Solia	128
1987	KAL Flight 858	115

Note: Criteria based on United States definition of transnational terrorism. For example, it does not include incidents such as the 1979 Tehran arson attack that killed over 400 people.

Source: Adapted from D. A. Wilkening, 'BCW Attack Scenarios', in *The New Terror*, eds S. D. Drell, A. D. Sofaer, G. D. Wilson, Hoover Institution Press, Stanford, 1999, p 103.

Non-state activity currently reflects a propensity towards the use of conventional weapon systems, yet it also indicates an increasing use of toxic-industrial chemicals and toxins. Not surprisingly, few of these incidents have resulted in outcomes of any relative consequence.⁵ Reflecting these principles within

⁴ The shift in perceptions where more moderate analysis began to permeate apocalyptic projections only changed in the late 1990s. Leading terrorism authors such as Hoffman, Purver, Stern and Falkenrath, consistently projected CBR use of dire and apocalyptic dimensions. See Hoffman, *Inside Terrorism*, Columbia University Press, United States, 1998; J. Stern, *The Ultimate Terrorists*, Harvard University Press, Massachusetts, 1999; R. Purver, *The Threat According to the Open Literature*, Canadian Security Intelligence Service, Canada, 1995; R. Falkenrath, 'Confronting Nuclear, Biological and Chemical Terrorism,' *Survival* 40 (Autumn 1998). There has, however, been a shift where some of these authors/analysts have subsequently revisited earlier analysis (Hoffman in particular), questioning many of the initial precepts and assumptions of CBR WMD analysis in the earlier assessments. These have generally included specific aspects of potential and the preparedness by transnational terrorists to effectively apply these technologies. Similarly there have been those that have made exhortations from the earliest analysis countering claims in the use of these technologies. See E. Sprinzak, 'The Great Superterrorism Scare', *Foreign Policy*, Number 112, 1998, pp 110-124. Sprinzak has long asserted that the apocalyptic fear of CB terrorism is perpetuated by rhetoric from governments and through emotive media coverage of the subject. This has resulted in a lack of balanced and accurate analysis of the actual threat of CB weapons by terrorists. Sprinzak was somewhat of a pariah in the position he adopted, particularly when contrasted against the exaggerated reporting on the subject at the time and the period in which his articles were first released (1997/1998).

⁵ 2000 WMD Terrorism Chronology. Also Department of State, *Patterns of Global Terrorism*, p 60.

balanced analysis and government policy, and throughout an effective national strategy, however, is an abstruse and poorly understood exercise. As with all risk analysis processes, the failure to adequately recognise all the relevant covariances or even windows in the process, rather than in aggregate, may result in nonrational behaviour – ultimately vitiating the early identification and recognition of key warnings and indicators.⁶ The capacity to understand and apply all effect-driven and cognitive biases still remains beyond the grasp of human instinct and importantly, state party decision and policy making processes. These biases arise because the problem of dealing with complex and ambiguous information leads people to adopt short-cuts to rationality that simplify perceptions in order to make more manageable the task of making sense out of different environments. It is these resulting biases that systematically influence the efficacy of any attempts at calibrating threat and establishing any measure of preemption. Consequently, it is only by understanding such biases that governments can grasp common patterns and errors that may then be corrected.⁷

It is the variation in these biases that the following section of the thesis seeks to explore. In attempting to define how controls are to be better effected, it is also as critical to fully understand who the measures are being targeted against. For example, while much of the current CBR activity seemingly indicates it is terrorist in origin, current reporting actually suggests a trend towards most activities being criminal in scope. While this of course depends on what is defined as terrorism, an understanding of the nature of the belligerents and their value structures is as critical to effective risk management as is knowing what to regulate. Hence, this section will explore both aspects throughout the prevailing analysis and areas of misunderstanding of non-state activity to better assist in providing the overall research with a strengthened theoretical premise and suite of assumptions from which preemption may then be better effected. This

⁶ The comments related to an analysis by Bernstein of M. Statman's theory on non-rational behaviour developed as a theoretical model for the study of risk aversion and risk management practices in economic analysis. P. L. Bernstein, *Against the Odds – The Remarkable Story of Risk*, John Wiley and Sons, New York, 1996, p 299.

⁷ R. Jervis, 'Perceiving and Coping with Threat', in R. Jervis, R. Ned Lebow, J. Stern *Psychology and Deterrence*, The John Hopkins University Press, 1985, p 18.

involves identifying core values and non-state structural typologies along with patterns in behaviour and decision making processes. The section uses as a case study the Japanese Aum Shinrikyo Cult, specifically the proliferation and development mechanisms used by the Cult.

Intelligence collection against larger and more static state chemical and biological programs is in itself an extremely difficult exercise. The dual-use nature of capabilities makes analysis widely interpretative and clearly identifying the nature of any actual threats difficult.⁸ This process is exacerbated when it involves non-state targets, particularly given the vicissitudes of the intelligence collection process and the significantly greater potential for covert and undetectable activity. Despite some similarities between state and non-state activities, generally the differences in dynamics, functionality and the nature of the threats is often widely polarised. It is this lack, however, in the realisation of these differences that currently limits the wider utility of international norms in influencing non-state capability development. These differences, and the dual-use scope of activities involved, make the clear and definitive articulation of what constitutes a CBR threat so complex.⁹

The CBR WMD spectrum covers a wide range of activities and at times is indistinguishable from incidents such as food contamination, public health reporting and a wide range of more general criminal activity.¹⁰ While CBR

⁸ United States Office of Secretary of Defence, *Proliferation: Threat and Response January 2001*, Washington DC, pp 1-7.

⁹ The dual-use element to the threat is highlighted in a range of incidents where the indeterminate or inconclusive nature of the incident complicates not only classification but the adoption of critical counter-measures. Some of the more interesting examples, some of which remain unresolved even today, include the 1999 outbreak of a flavivirus in New York City – West Nile fever. The virus is a type of encephalitis and given the lack of background and endemic reporting in the region of the outbreak and how the virus may have started or have been introduced, initial reporting of activity was attributed to terrorist activity, however, it was later deemed to be a public health incident, albeit the cause is still indeterminate. The second example involves the crash of flight TWA 800 in 1996 and the suspicion that a terrorist may have had involvement in the crash that subsequently killed 230 people, which was later attributed to mechanical failure. The third example involves reporting by the media of the unexplained release of reportedly cleaning chemicals at Kingsford Smith International Airport during the Olympics. Over forty people were hospitalised and the initial reports were suggestive of a possible terrorist attack, however, later investigative analysis concluded it was more probably attributable to cleaning fluids having been accidentally released.

¹⁰ For example, FBI statistical data which attempts to profile all cases opened by the Bureau involving CBR incidents in the United States, reflects a wide spectrum in the range of activities. Interestingly, the figures still only reflect reporting of cases opened (so many more hoaxes and state based activity would go

WMD non-state activity has so far been confined to one end of the technology and activity spectrum, the question remains uncertain as to how long this will continue, or more importantly, what are the indicators that may constitute change. Current efforts predominantly focus on attempts to understand non-state organisational dynamics and capabilities, the difficulty being, however, that most of these variables are dependent on psychosocial influences and establishing a 'state of mind' – which in the main are very intangible and qualitative concepts. Establishing a correlation between behavioural activities and organisational structures and then attempting to identify a greater propensity towards the adoption of a specific technology or capability will always be an uncertain science. It is the need for empirical data, when there is none to be had, and the failure to comprehend the dependence on aspects of indeterminateness, that in the end vitiates many of the accepted non-state analytical processes and models. Falkenrath aptly refers to this aspect of uncertainty in the analysis process as the problem of 'knowability'.¹¹ Yet knowing and further defining the parameters in any aspect of these uncertainties is in itself a critical step in the effective management of risk. That is, 'if threat assessment were a simple extrapolation of past trends, analysis would probably conclude that there is no threat from terrorist use of WMD'.¹²

Estimation and calibration of non-state threats is increasingly complex, particularly when considered against the ephemeral and amorphous nature of many of the organisations, structures and activities involved. These

unreported), with many remaining inconclusive in outcome and including hoaxes, suggesting that the data may not necessarily reflect actual trends or indeed, allow for the accurate assessment of threat. That is, many of the incidents might otherwise be classified as public health related or more reflective of nuisance, as opposed to terrorist, type activities. For example, numerous incidents involve the targeting of family planning clinics by militant 'Right to Life' and single issue groups, along with letters threatening the release of an agent or substance which is purported to be a CBR agent – normally anthrax. As at June 1999, the FBI noted a significant increase in criminal cases of CBR incidents from 37 in 1996, 74 in 1997, 181 in 1998 and 114 mid way through 1999, with three quarters of the cases involving biological release (or the threatened use of). The most often cited agent was anthrax, particularly for 1998 and 1999. Statement by B. Martinez, National Domestic Preparedness Office, Federal Bureau of Investigation on Preparedness for Terrorism Response before United States House of Representatives, Transportation and Infrastructure Committee, Subcommittee on Oversight, *Investigations and Emergency Management*, Washington DC, 9 June 1999.

¹¹ R. Falkenrath, 'Unknowable Threats, Prudent Policies in WMD Terrorism: An Exchange', *Survival*, 40, Winter 1998-99, p 181.

¹² R. Falkenrath, 'Confronting Nuclear, Biological and Chemical Terrorism', *Survival*, 40, Autumn 1998, p 50.

considerations, when combined with the volume of background activity against which indicators must be discriminated from, suggests a propensity for a heightened over-dependence by analysts on limited and/or uncorroborated information and intelligence. It is this uncertainty in the information evaluation structure that is a key contributing factor towards misinterpretation and the predisposition to overstating and overcompensating in the analysis of potential threats.¹³ The problem in the analysis of the threat is that it is not just limited to articulating the contours of a comprehensive strategy of prevention. Any strategy begins with a clear understanding of risk and its interdependence on deterrence measures, and therefore considerations of threat. An understanding of the CBR WMD threat continuum is then as much dependent on a knowledge of the belligerents that may choose to develop and use a capability as it is in understanding the technical capacity of the weapons systems or platform that may be developed or applied.

The analytical vehicle through in which these factors should coalesce into an assessment of risk is defined and set in Australia by the 'Australian and New Zealand Standard 4360:1999'. While the process seeks to establish qualitative and quantitative modelling criteria, in the end, it is articulated and applied as a mechanical and prescriptive process model. It defers more to the disaggregation of risk into weighted indices and fails to comprehensively consider aspects of vulnerability, potential and utility, having little relevance in the assessment of such a seemingly abstruse concept as the estimation and calibration of WMD threats.¹⁴ The structural failure to adequately include considerations of threat

¹³ G. Cameron, 'WMD Terrorism in the United States: The Threat and Possible Countermeasures', *The Non-Proliferation Review*, Washington DC, Spring 2000, p 174.

¹⁴ The standard outlines classification and definition of risk on the basis of its consequence, which in the case of the WMD incident would use the description 'catastrophic', and for aspects of likelihood, 'rare'. Interestingly, using the standard, the categorisation of frequency appears to carry an undue weighting when contrasted against other criteria. A CBR WMD incident, which fits the criteria assigned in the tables for, 'may occur in exceptional circumstances', potentially skews the overall assessment of the risk. Using these assigned categories for likelihood and consequence, the result derived from the risk analysis matrix assigns the category 'high risk – senior management attention needed'. The weighted index for the frequency of the event skews the final risk analysis grading suggesting that the model is flawed. In applying this matrix to a WMD model there is significant potential for incompleteness and inaccuracy in the structure and expression of the assessment. For example, which is assessed to be of higher risk, an incident involving 100 small separate explosive detonations resulting in numerous casualties, or one significant incident involving CBR capabilities and a catastrophic outcome? While the Standard only forms the basis for risk assessment within Australia and should be structured to meet the requirements for individual organisations, it is inadequate as a framework for such a significant and potentially catastrophic

and consequence as a function of risk, more often renders the standard as nothing more than a business model and limits its utility for threat reduction and consequence management agencies.¹⁵ The application in applying the variable of frequency within the risk process, (while critical throughout economic models), wrongly assumes that the most catastrophic occurrence can be addressed equally well by planning for any less serious.¹⁶

The concept of threat alone is somewhat incongruous, particularly in the estimation and context of WMD. Whatever the different interpretations of threat, they must consider as wide a range of variables as is practicable, such as individual or organisational dynamics, function, structure and the motivation and intent of the belligerents. Ironically, however, analysis has so far been directed towards circumscribing the threat by working through the exercise of profiling organisations likely to resort to WMD weapons and investigating the requirements for consequence management. Analytical processes evident throughout the wider assessment of WMD capabilities, suggests that once there are certain indicators of intent, interest or acquisition, there is an inevitability and finality in the capability development process. When contrasted against the existing knowledge of capability and capacity, however, the only conclusion can be that the prevailing assessments appear to have outrun the available evidence.

security related event, particularly one involving the wide range of factors and permutations from non-state use of a CBR and/or WMD capabilities.

¹⁵ There is an increasing attempt to apply economic and management models to the management of complex crisis models. While many of these concepts are not new, the quantitative processes that attempt to template them against non-state activities and aspects of indeterminateness provide for a quantification more often when none can be found. Economic models and theorems, such as Game Theory, seek to apply attitudinal variables and escalation/de-escalation calculations to qualitative concepts, quickly becoming unworkable in a multi-party and/or non-conciliatory environment. Bernstein, op. cit., p 243 and W. Isard, *Understanding Conflict and the Science of Peace*, Blackwell Publishers, London, 1992, pp 127-184.

¹⁶ While the axiom covering the dependence of threat on aspects of capability and intention still remains true, its context is what provides the assessment with any validity. For example, the attacks on 11 September 2001 by terrorists using box cutters and knives to kill approximately 3000 people appears to change the dynamics in re-defining expectations of capability. The outcome achieved obviously exploited a major national vulnerability in the security systems for airlines, however, claims by experts such as Echevarria that the capacities of terrorists are now only constrained by their imaginations, is unfounded and without precedent. The dependence on a commensurate capability with estimations of intent, particularly in the use of WMD, still remains as valid post 11 September 2001 as it did prior to the event. A. J. Echevarria, 'Homeland Security Issues: A Strategic Perspective', in *Defeating Terrorism: Strategic Issue Analyses*, ed J. R. Martin, Strategic Studies Institute, Department of Defence Publication, Pennsylvania, January 2002, pp 31-36.

The result is a continuing theme of overstated capabilities and grossly inaccurate assessments of intent.¹⁷

While exaggerated assessment processes are often convenient vehicles for increased funding and greater organisational profile, the process ultimately impairs the effectiveness of the national deterrence structure to effect any real measure of preemption. The finite nature of resources means that more often efforts are increasingly directed at aspects of vulnerability, as opposed to threat. This vulnerability weighted analysis re-directs critical effort, fails to define accurate priorities and is used to appease government and media perceptions of threat, rather than being directed at more relevant and real considerations of risk and preemption. Fear and resourcing cannot be the strongest determinants for policy and planning. Uncertainties and vulnerabilities impose impossibly high costs in sustaining measures and are more often not sustainable beyond the last throes of interest from the most recent crisis.

Perceptions of the risk from CBR capabilities have been heavily influenced through the peccant fascination with CBR incidents. The appearance of increasing trends in reporting of CBR incidents, most of which would be classified as hoaxes or misinformation, appears to have had a major influence in shaping perceptions of actual risk and also in drawing potential belligerents to these types of materials and capabilities.¹⁸ While it is critical to distinguish current reporting trends in activity from those that may potentially result in a mass casualty event, the distinction is as much one of understanding and identifying the collection and categorisation processes, as it is in characterising the capabilities being used.¹⁹

¹⁷ J. P. Zanders, 'Assessing the Risk of Chemical and Biological Weapons Proliferation for Terrorists', *The Non-proliferation Review*. Washington DC, Fall 1999, p 17.

¹⁸ FBI data on US domestic reporting of CBR incidents reflects most activities involving CBR use as being criminal in origin. Incidents highlight a high incidence of hoaxes and threats of use with the agents anthrax and ricin being two of the most frequently reported. Many of the threats and/or hoaxes involved the claimed release of these agents via an envelope or the post and in most of the cases, a letter containing a threatening letter involving demands or simple statement informing the recipient they had been contaminated with anthrax. With the exception of the anthrax tainted letters sent over the period September-October 2001 throughout the United States, previously there had been no recorded deaths through anthrax or ricin contaminated letters. *2000 Monterey WMD Terrorism Chronology*.

¹⁹ Reports classified as a bombing and/or incendiary incident are often dependent on the discretion of the responding agency as to how an incident is classified. For example, if the fire services respond to an

In attempting to apply a typology or trend to those who may attempt to develop and use CB technologies, it is necessary to understand the premise and criteria on which the data is collected, compiled and categorised. This, in essence, ensures both validity and veracity in the analysis and assessment process. That is, the tendency towards exaggeration of the threat based on data derived from hoax or low end spectrum reporting, in particular, erodes any ability to accurately calibrate the threat. By overreacting and falling prey to a sense of acute fear, intimidation and the visceral influences that the possible use of CBR capabilities evokes, it disproportionately inflates any perceptions of the threat and continues to enshrine harm mitigation, rather than preemption, as the core value within the national security strategy. The incorrect lessons derived from the 1995 Aum Shinrikyo experience, particularly those in relation to the threat assessment and crisis management processes, illustrate the dangers of responding emotionally rather than soberly and calmly, to any asymmetric threat.²⁰

The increasing lack of capacity within states to detect any escalation in non-state activity exerts significant pressures on the capacity of national security organisations. The complexity of the threats and in the credible identification of indicators, along with systemically inadequate analytical processes, more often obfuscates any real potential for preemption. Yet the only certainty is that there will never be enough intelligence assets or product. A relatively recent example that highlights these uncertainties and indeterminateness in the analytical process

incident that has resulted in a fire, but which was initiated by the deliberate combustion of incendiary materials or the detonation of an improvised explosive device, then it is likely (though not always the case) that the incident would be categorised as a fire. This is most prevalent in the reporting of incidents involving chlorine and brake fluid incendiary compositions where, as a result of the exothermic reaction, toxic chemicals are released which have the potential to cause respiratory and ocular irritation, particularly within a confined space. The symptomatology associated with exposure and the resultant incendiary reaction from the chemicals indicates these devices could be (and have been) mistakenly classified as chemical attacks. Personal communication with Australian Federal Police Bomb Data Centre staff, period 1998-2000. Personal communications with NSW Fire Services, Superintendent J. Hamilton and J. Bedford, 20 June 1999.

²⁰ B. Hoffman. *Terrorism by Weapons of Mass Destruction: A Reassessment of the Threat*, RAND, Washington DC, 1999, p 7. In terms of the 1995 Tokyo subway sarin attack by the Japanese Aum Shinrikyo Cult, the response to the incident was overwhelming and gridlocked most emergency response and civil infrastructure assets throughout the city. The response to the incident involved 340 emergency units consisting of rescue teams, command units, pump companies, lighting units, medical support units and ladder companies. This included over 1364 response people (not including police and military people). J.R. Godredson, Presentation to Emergency Management Australia Special Chemical Hazards Workshop, Chief Fire Officer Melbourne Metropolitan Fire Brigade, Melbourne, 11-12 March 1996.

concerns the bombings of the United States embassies in Nairobi and Dar es Salaam on August 7, 1998. The findings of the review boards found there was no intelligence failure or tactical warning of an attack. Admiral William. J. Crowe, the Chairman of the United States State Department Boards noted that the United States State Department receives around 30,000 threats each year, yet the capacity to discern between credible and non-credible simply on the basis of volume and resources alone greatly diminishes the capacity for early warning. The findings of the Board of Investigation were that there was:

To this day, after the explosion, we still have no evidence that those particular warnings were connected in any way with the attack. The fact is that in the state of intelligence today, and in the state of how complex these [terrorist] organisations are, and the difficulty of deriving what they are doing, that it is just not within our reach to have tactical warning. We may have it sometimes, but that is a bonus, not something we can depend on. We've got to assume that we will be without tactical warning and proceed on that basis.²¹

A key determinant in establishing risk is recognising the complete spectrum of activities across which preemption is to be applied. The complexity of the spectrum of unconventional capabilities is that unlike the regulation of conventional weapon systems which are defined and regulated on the basis of specific-to-use components and easily distinguished technical specifications, unconventional capabilities are predominantly dual-use. Distinguishing typologies and behavioural patterns of activities across non-state organisational structures is only surpassed in complexity by the regulation of the spectrum of WMD capabilities over which regulation and collection must be applied. This is then further complicated through the extensive range of permutations and

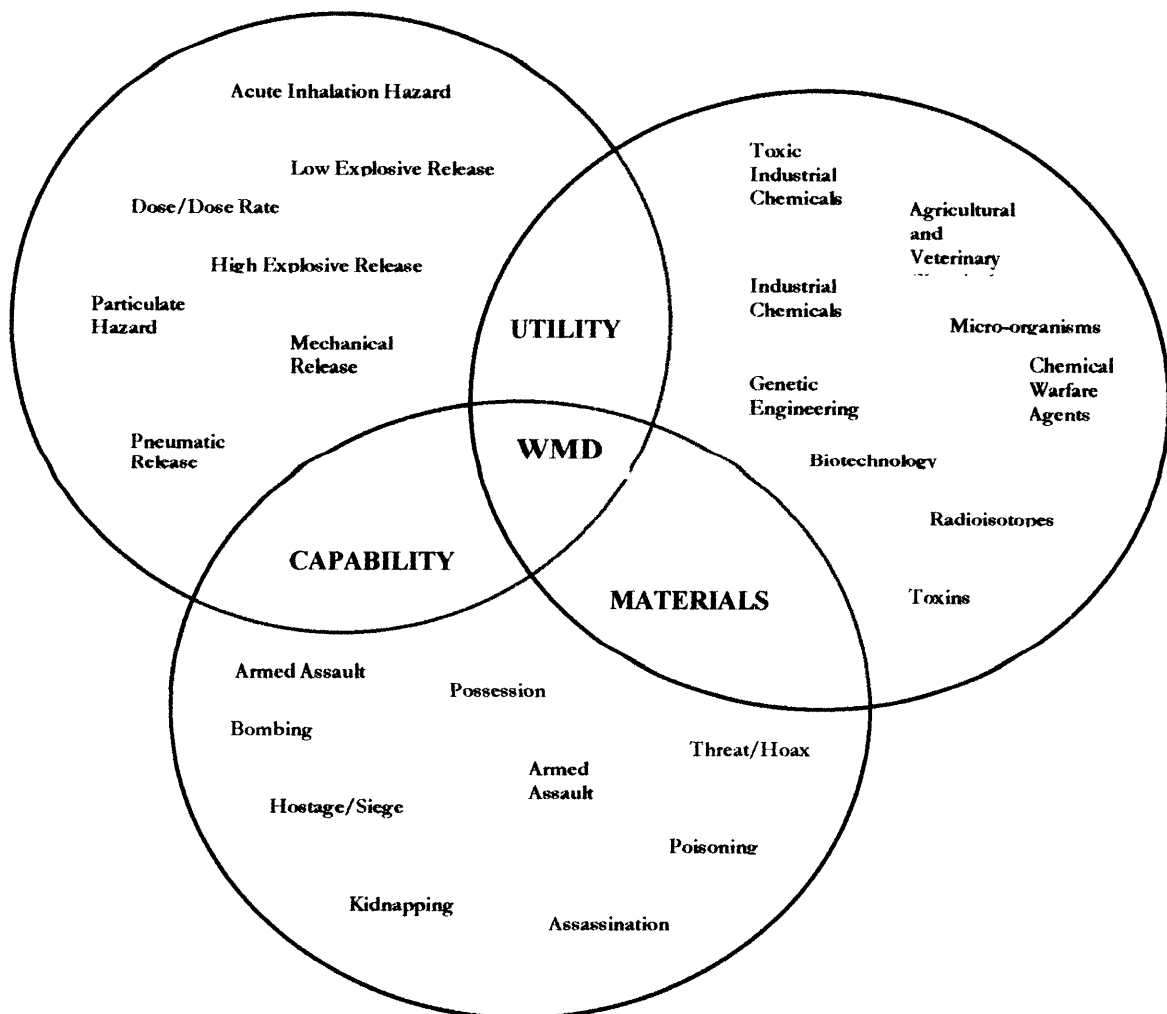
²¹ W. J. Crowe, *Press Briefing on the Report of the Accountability Review Boards on the Embassy Bombings in Nairobi and Dar es Salaam*, United States State Department, Washington DC, 8 January 1999 as cited in Cameron, 'WMD Terrorism in the United States: The Threat and Possible Countermeasures', p 173.

combinations in how WMD capabilities can be applied within a non-state context.²²

Diagram 1 provides an overview in the range of permutations between materials, capabilities and the utility within the spectrum of WMD threats. It highlights both the spectrum across which WMD activities can be applied and the variation throughout the range of materials, utility and capabilities. The concept that one event is automatically associated with another is neither empirically established and is ambiguous at best. For example, it is convenient within analysis to aver that the use of poisons is indicative of a linear progression or inevitability towards the development of chemical warfare agents, but this is not supported by the historical record or indeed likely. The key assumption then that interest, possession and the use of CBR agents is increasing, still stands rigorous examination, however, as identified in Diagram One it remains widely interpretative and influenced by many different and qualitative variables. Fundamental, however, is the precept influencing increases across activity trends, that is, the conclusion of weakening constraints – both psychological and in the nature of the physical security measures, such as those that establish national regulatory measures. The former, as a result of events such as the 11 September 2001 terrorist attacks, serving to erode moral and psychological constraints on mass casualty outcomes, and the latter on the basis of an increasing diffusion and availability of technical and engineering capabilities.

²² As an example, the Monterey database lists three CBR incidents for Australia for the year 2000 which highlight the spectrum across which capability, utility and materials are interpreted. It includes an incident involving a blood filled syringe, a case of industrial extortion involving deliberately contaminated pharmaceuticals and the discovery of three harmless vials of a homeopathic medicine. Assessment of the database entries up to June 2001 indicates that up to two thirds of the entries would be more appropriately categorised as inconclusive, indeterminate, apocryphal, public health related or could simply not be classified as CBR incidents. Credible analysis must distinguish between and look beyond existing axioms, most particularly those simple fatalistic and apocalyptic assessments which tend to draw projections of activity based on the last incident or a limited sample from the historical record. *2000 Monterey WMD Terrorism Chronology*.

**DIAGRAM 1 – THE WEAPONS OF MASS DESTRUCTION
SPECTRUM OF NON-STATE ACTIVITIES**



IDENTIFYING A PROPENSITY TOWARDS MASS DESTRUCTION: NON-STATE VALUES, STRUCTURES, CONSTRAINTS AND THE ORGANISATIONAL DYNAMIC

An Exercise in Constraint

The constraints against non-state use of WMD, whether ideological, religious or motivational, are by no means immutable. The complexity and often violent irrationality of the act does not provide for eidetic images or insights into the philosophy and mindset of the non-state actor. Change, when it occurs, will

often be unexpected and immediate. The advent of increasing militarism within groups, particularly within the far right, the growing following of millenarian and religious cults and perceptions of iniquitous balances of power from nationalist and ideological non-state organisations, more often obfuscates analysis. An understanding of the underlying organisational values and moral disengagement mechanisms within a group potentially provides the greatest opportunity towards identifying an escalation of violence and the intent to use mass casualty capabilities. The difficulty is, however, not just one of access. Snatches of information and staged press releases, often hidden within the idiosyncratic ravings of religious dogma and interspersed with statements of intent, make it difficult to distinguish between issues of concern and those that are not. It is therefore convenient to adopt a position in the analysis of WMD capabilities of an inevitability and certainty that non-state actors will use WMD capabilities – and never be wrong. Yet this type of analysis has little real analytical value and is more often counter-productive because it results in the redirection of scarce resources and allows fear and perception to set the agenda for change.

Despite widely held perceptions of the catastrophic inevitability of CBR WMD drawn out in elaborate ‘what if’ scenarios, there is also an increasing, but only relatively recent, range of assessments that are equally dismissive of these scenarios.²³ While there is merit in both positions, the real hazard is in typecasting the development of a typology of terrorist organisational dynamics and the assumption that these positions are then incontestable. It is critical to remain cognisant that the capacity to utilise a WMD capability has always existed. The circumstances of the 11 September 2001 attacks against the United States have always been possible, and indeed would have actually been easier to

²³ For one of the more balanced counter arguments on WMD CBR use which seeks to qualify and moderate the debate on the likelihood of WMD terrorism, see Sprinzak, ‘The Great Superterrorism Scare’, pp 110-124. For a wider perspective and analysis of specific case studies, see J. B. Tucker, *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons*, MIT Press, United States, 2000. and B. Roberts, *Hype or Reality: The New Terrorism and Mass Casualty Attacks*, Chemical and Biological Arms Control Institute, United States, 2000, and B. Hoffman, *Terrorism by Weapons of Mass Destruction: A Reassessment of the Threat*, RAND Publication, Washington DC, 1999. While these publications are by no means representative of public opinion or current government policy, they do provide a broad perspective of extant academic thought and analysis of WMD CBR issues through the presentation of a wide range of views and current assessments of non-state incidents.

orchestrate decades ago with fewer discriminatory security and detection processes. The fundamental issue, however, is that no non-state organisation prior to this point had sought to realise this potential. Jenkins in 1997 argued that as a rule only about 20 percent of terrorist incidents involved fatalities, and of those, most involved only one or two. He then suggested that the record of terrorism indicates that most terrorist acts involve only symbolic violence.²⁴ While this view is hard to place in a context against the series of mass casualty attacks against United States' interests in the late 1990s, when viewed against activities and operations by groups such as Al Qaida, there still remains some limited validity to the assertion of constrained actions.²⁵

Attempting to better understand and recognise changing patterns in non-state operations and organisational structures, particularly proliferation mechanisms, will, however, greatly assist in better identifying indicators that suggest a potentially increased preparedness to use and apply ultra-violent measures.²⁶ Yet the typologies which have in the past been applied to non-state organisations to categorise many of these same values have increasingly become redundant. The wide range of groupings, philosophies and ideologies have made it more difficult to distinguish clear threads of coherent and meaningful ideological

²⁴ B. M. Jenkins, 'Understanding the Link Between Motives and Methods', in *Terrorism With Chemical And Biological Weapons: Calibrating Risks and Responses*, ed B. Roberts, The Chemical And Biological Arms Control Institute, Washington DC, 1997, pp 43-52.

²⁵ Usama Bin Laden and Al Qaida have been associated with a wide range of activities ranging from crime and drug production to money laundering and support to the Taliban Government of Afghanistan. Yet throughout their activities most have involved only limited casualties. For example, 29 December 1992 bomb blast in Yemen (two dead), 26 June 1995 attempted assassination of Hosni Mubarak in Addis Ababa. Y. Alexander, and M.S. Swetnam, *Usama Bin Laden's al-Qaida: Profile of a Terrorist Network*, Transnational Publishers, New York, 2001, pp 32-33, 37-51.

²⁶ J.M. Post, 'Psychological and Motivational Factors in Terrorist Decision-Making: Implications for CBW Terrorism', in *Toxic Terror: Assessing the Use of Chemical and Biological Weapons*, ed J. B. Tucker, MIT Press, Stanford, 2000, pp 271-291. Studies suggest that there are three factors: the phenomenon of 'groupthink', distorted psychological assumptions and the tendency of groups to make riskier decisions. Groupthink is possibly one of the most significant and most apt to occur in groups that are isolated, such as religious and extremist organisations. The danger and stresses tend to unify the group, particularly against an external enemy and these pressures contribute to what Post describes as a 'hothouse' atmosphere in which the expression of doubt can be fatal. The secondary characteristic is related to psychological distortion where the group's perspective and value system is distorted to such an extent as to be self-defeating or promote self-dependency where members defer all judgement, moral or otherwise, to the all knowing leader or a key member of the organisation. Finally, risk taking, is where there is evidence that the group is more prone to take risks than the individual, as the group can often promote boldness and courage in that individual members would often suppress doubts they might normally express during decision making sessions, lest they be perceived as cowards. A. Semmel, D. Minix, 'Group Dynamics and Risk Taking', *Psychological Models in International Politics*, ed L. S. Falkowski, Westview Press, New York, 1979, pp 251-281.

values or beliefs. For example, many of the United States right wing militia ideologies draw from Christian and fascist political dogma and are based more on movements than cellular or functional groupings.²⁷

A key aspect in this analytical process, which is not well understood, is the increasing interrelationship and dependence by these organisations on crime. Organisations such as Al Qaida were reportedly funded through the proceeds from drugs and financial support received from charities and aid organisations.²⁸ Yet the actual influence of crime on structures and operations by non-state organisations is either largely ignored or excluded from wider analysis, other than in attributing it as a source of revenue, funding, resources or a vehicle for micro-proliferation activity.²⁹ This confluence of international and domestic trends in crime and terrorism, in particular, is structurally changing what is understood of non-state organisations, most particularly in exacerbating frustrations in the interdiction of their activities. The lack of a command and control organisational apparatus, a greater dependence on high revenue crime and an absence of the traditional signatures associated with 'hard core' terrorist tactics and techniques, ensures states will continue to struggle with even defining the nature of these threats.³⁰

²⁷For further information on both terrorist organisations and associated sub-groups or ad-hoc organisations see United States Department of State, *Patterns of Global Terrorism*, op. cit., pp 3-7, 55-56. For further information, specifically on Usama Bin Laden and the organisation Al Qaida's structure, as a comparative analysis with the Aum, see G. Cameron, 'Multi-track Micro-proliferation: Lessons from Aum Shinrikyo and Al Qaida', pp 277-310.

²⁸ Alexander, op. cit., p 29.

²⁹ There is a strong case to suggest organised crime and many forms of terrorism are increasingly becoming inextricably linked. That is, terrorism and crime are mutually complementary either through the process of revenue generation for the organisation or in the act of violence itself. An interesting example of the process of raising revenue is provided in the analysis of activities by Usama Bin Laden and Al Qaida, in which they were reportedly to have benefited significantly from the drug trade in Afghanistan (which was coincidentally state sponsored by the Taliban regime). Bin Laden has reportedly arranged money-laundering facilities through the Russian and Chechen Mafia and by 1999, estimates suggest he was taking a cut of between two and ten percent from all Afghan drug sales (which were estimated at US \$133-1000 million per annum). S. Reeve, *The New Jackals: Ramzi Yousef, Osama Bin Laden and the Future of Terrorism*, North Eastern University Press, Boston, 1999, pp 207-208, and also see P. Williams, 'Terrorism and Organised Crime: Convergence, Nexus or Transformation', *Hype or Reality: The New Terrorism and Mass Casualty Attacks*, ed B. Roberts, Chemical and Biological Arms Control Institute, Washington DC, 2000, pp 117-146.

³⁰ B. Hoffman, 'The Confluence of International and Domestic Trends in Terrorism', in *Terrorism and Political Violence*, Volume 9, Number 2, Frank Cass Publishers, Summer 1997, pp 1-3.

In terms of further developing the analysis of capacities, capabilities and the propensity for ultra-violence, it is necessary to examine and understand the organisational values and belief structures within non-state organisations. It was earlier identified in the thesis, however, that applying a typology for the purposes of identification, interdiction and developmental trends may potentially result in a fundamentally flawed model if generalisations are too easily applied. Despite this, for the purposes of presentation and to assist in a better comparative analytical profile of the varying beliefs through which the contrast in the different typologies can be applied, the thesis will continue within the confines of these organisational typology models.

Religious Fundamentalism.

This category spans a wide range of beliefs and religious ideologies and includes apocalyptic, millenarian, redemptive fanaticism and also those that promote extreme racist or ethnic hatred within their core value systems.³¹ While the categorisation is extremely general, these groups, because of their legitimisation mechanisms and the deferral of the justification of violence to a 'higher power', potentially have an increased proclivity towards violence and are more likely to adopt the use of ultra-violent measures to define, shape or resolve outcomes. In essence, the general theme underlying the organisational values, other than the maintenance or creation of a social or religious order, is an isolationist and redemptive doctrine espousing the annihilation of apostates, such as those values applied in organisations such as the Egyptian Islamic Jihad and the al-Gama'at al-Islamiyya. Actions are often legitimised by religious or theological doctrine,

³¹ While the classification of white supremacists along with apocalyptic, millenarian and cultists is convenient for presentation purposes and discussion on the potential for WMD CBR use, the groups espouse quite different teachings and philosophies. White supremacists often include a wide range of survivalist and racist principles along with strong idiosyncratic interpretations of Christian teachings. While millenarian and apocalyptic beliefs believe in the demise of the human race, the difference is what transpires following the event. For further information see P. Chalk, *Terrorism and Weapons of Mass Destruction Use: An Analysis of Potential Candidate Groups*, RAND DRR-2188-OSD, United States, September 1999. Also see B. Hoffman, *Inside Terrorism*, and see P. Armond, 'Right-Wing Terrorism and Weapons of Mass Destruction: Motives, Strategies and Movements', in *Hype or Reality: The New Terrorism and Mass Casualty Attacks*, ed B. Roberts, The Chemical and Biological Arms Control Institute, Washington DC, 2000, pp 49-68.

with a somewhat Manichean world-view.³² The dehumanisation process is a critical aspect within these organisations, with this fundamentalist perspective usually facilitating a moral disengagement from their actions. Similarly to many other organisations, the role of the leader or dominant personality is normally a fundamental building block within these types of group. Action may be facilitated through the leader's own idiosyncratic religious dogma or role as an interpreter of the word of God, thereby often assuming a central decision making role within the group.

The People's Temple, while not a terrorist group, exhibited traits indicative of religious fundamentalism and the propensity to apply extremes of violence. Albeit the violence was directed internally and involved the mass suicide and murder of nine hundred people in Jonestown, Guyana on 18 November 1978.³³ The Cult leader, Reverend Jim Jones, committed suicide along with his followers, which included women and children, by drinking Kool-Aid laced with cyanide.³⁴ Religious extremist groups have been responsible for some of the most lethal and violent acts of terrorism. Most do not exhibit the restraint against acts of indiscriminate violence that might be observed in other non-state organisations or belief structures. The actions of organisations such as Al Qaida and al-Gamoi'at al-Islamiyya, suggest religious fundamentalist groups are some of the more likely and willing groups to adopt measures that could potentially result in mass casualty outcomes.

Left Wing Beliefs and Organisations

These organisations have in the past been discriminatory in the method and application of their violence. Generally these organisations have developed as a result of the historical global standoff between east and west, their goals being based on reform through the application of their own idiosyncratic versions of a

³² Chalk, *Terrorism and Weapons of Mass Destruction Use: An Analysis of Potential Candidate Groups*, pp 6-8.

³³ K. Wooden, *The Children of Jonestown*, McGraw-Hill, New York, 1981, 6-46.

³⁴ Evidence suggests that there were a number of people that were assisted or murdered by the Reverend Jim Jones' security cadre. While some died of gunshot wounds to the head, the majority were found to have been poisoned.

universalist political dogma drawing on Marxist, Leninist or Maoist doctrine. Their goals are often ill-defined and lacking in coherent and realistic expectations.

It would, however, be a grave error to dismiss the left-wing terrorists as either totally feckless and frivolous or completely devoid of introspection or seriousness purpose.³⁵

Targets were often selected to make particular statements or highlight an aspect of social injustice and in the main were directed against governments or sectors of commerce.³⁶ While many maintain a hardened belief in the efficacy of violent action and see it as an end in itself, left wing terrorism would be less likely to adopt a mass casualty or CBR WMD capability as their purposes are premised on the eventual legitimisation of the cause. Additionally, the abhorrent nature of these weapons and the potential mass casualties that might result from the effective use of CBR weapons, would not be commensurate with their own values. As Chalk assesses, these groups may often exhibit a strong sense of organisational confusion and in doing so, lose their ideological *raison d'être* and the context from which they originally arose. As a consequence, the likely use of CBR WMD capabilities from left wing groups appears improbable.³⁷

Right Wing Beliefs and Organisations

There is an ease in characterising the use of CBR WMD by right wing non-state groups as high as their value system is strongly dependent on an intimidatory culture and often feeds off a process of violence. While there are strong themes of violence throughout the right wing movement, there also remains a wide range of groups across this category. These include white supremacists and some militia groups. While both may advocate or justify the use of violence,

³⁵ Hoffman, *Inside Terrorism*, p 173.

³⁶ *ibid.*, pp 45-66.

³⁷ Chalk, *Terrorism and Weapons of Mass Destruction Use: An Analysis of Potential Candidate Groups*, p 12.

their rationale for its adoption is often not for the same reasons. Reports of activities by right wing groups within the United States, in particular, have indicated strong interest by some in acquiring or developing CBR capabilities. Current reports of activities, however, have generally been limited to possession and the manufacture of anthrax, ricin and low end spectrum materials, with all incidents being limited in scope and any capacity to effect an outcome involving mass casualties.³⁸

The diverse, amorphous and secretive nature of right wing organisations makes it particularly difficult to establish a clear value structure for them. Many are extensively networked through a decentralised structure and connectivity is provided through well orchestrated belief and value systems. Most interestingly, they tend not to be hierarchical, with some of the groups actively espousing what they have referred to as a doctrine of 'leaderless resistance'.³⁹ This lack of formalised control structure obscures any effective collection against these organisations. Right wing groups generally embrace strong conspiratorial theories which suggests they perceive sections of the community as opponents of their adversarial theology.⁴⁰ This aspect makes it easier to legitimise violent action and overcome any moral constraints within the organisation's structure, particularly when it is often a loosely non-hierarchical grouping. A large component of the ideology of the right also tends to promote a culture which sees actors relatively immune to societal and legislative norms, suggesting a

³⁸ 2000 Monterey WMD Terrorism Chronology.

³⁹ The term 'leaderless resistance' was used in the wake of the 1986 Fort Smith sedition trial by Christian Identity leader Louis Beam. He assisted in establishing and strongly advocating, so called, phantom cell networks and autonomous leadership units that would operate completely independently of one another, but through their individual terrorist acts would eventually join together to create a chain reaction leading to a nationwide white supremacist revolution. Hoffman, *Inside Terrorism*, pp 117-118. In essence, it describes a plan for resisting arrest or prosecution while maximising the surprise and violence of terrorist attacks. de Armond, *Right Wing Terrorism and Weapons of Mass Destruction: Motives, Strategies and Movements*, p 5.

⁴⁰ Chalk discusses the concept of dualism and its application to categorise terrorist organisations, in his case the reference is to religious fundamentalism. There is, however, an underlying precept of dualism throughout and within most terrorist organisations. It espouses a philosophical world view that emphasises the opposition between two forces or ideas. While it does have a key role in religious fundamentalism, the 'radical disjuncture', as Chalk describes it, between the now and future or the result of a corrupting force which must be destroyed, underlies issues within left and right wing doctrine as much as it does for religious fundamentalism. Chalk, *Terrorism and Weapons of Mass Destruction Use: An Analysis of Potential Candidate Groups*, pp 20-23 and footnote lxii.

strong preparedness to act independently, illegally and with a preparedness to utilise ultra-violent measures.

While there have been a number of incidents with the right involving WMD interest and acquisition, the issues previously identified are exemplified in the incident involving two individuals from the American Christian Patriots who in 1995 bombed the Alfred. P. Murrah Federal Office Building in Oklahoma City. The individuals' actions were based on a strong and parochial, anti-government and religious belief structure, primarily directed against the United States Government. As with cults and millenarian groups, there is a great difficulty in the monitoring and interdiction of these groups due to a lack of indicators as a result of the secretive nature of their organisations and activities. Most CBR activity by right wing groups has been limited and 'tactical' in its application, that is, it has predominantly been directed against individuals or organisations.⁴¹ Given the enmity fostered within these organisations, most particularly their own perceptions about the threat from 'outside' towards their own social order or racial purity, these can easily provide the necessary mechanism and incentive to develop or use a WMD capability, possibly one involving CBR agents.

Ethno-Nationalist/Separatist Movements

These are groups that draw on the disenfranchised and seek popular support, perceiving themselves as correcting a flaw in a system, either on the basis of homogeneity or cultural, social or ethnic association. They have a clear vision they identify with and may perceive themselves as a government in exile or as an alternate form of government. They generally are representative of distinct groups, either nationalist or territorial, and are probably the least likely to resort

⁴¹ There have been a range of incidents, most confined to the United States, that have involved right wing groups either demonstrating interest, possession or attempts at use, of chemical and biological agents (mainly confined to ricin and anthrax). In 1992, members of the Minnesota Patriots Council were arrested for allegedly plotting to bomb a federal building and target Internal Revenue Agents with ricin. In 1995 Larry Wayne Harris, reportedly a Lieutenant with the Aryan Nations, used falsified documentation to obtain three vials of *Yersinia pestis* from the American Type Culture Collection in Rockville, Maryland. In 1998 Larry Wayne Harris was arrested, along with William Leavitt, a known white supremacist associated with the Aryan Nations, for possession of an attenuated strain of anthrax. One of the better known cases, involving a relatively significant quantity of biological agent concerned Thomas Levy, an electrician with ties to an Arkansas survivalist group. He was arrested in 1993, but later committed suicide while in jail, for smuggling 130 grams of ricin across the Canadian and United States border.

to extreme violence that might result in mass casualties. The violence they advocate is discriminate and constrained as they will rely heavily on ethnographic and international reaction and recognition of their cause. For example, while organisations such as the Kurdish Workers Party (PKK) have been reported as having utilised toxic industrial chemicals, it has been confined to discriminate and tactical use, more often involving the poisoning of water sources, similar to the Chechen use of CB materials.⁴² The employment of a CBR WMD capability appears as an antinomy for ethno-nationalist terrorist groups given their constrained and more clearly defined ideology. That is not to exclude them from employing more indiscriminate and capable tactical level weapons, such as toxic industrial chemicals. Additionally, the preparedness by groups, such as the Liberation Tigers of Tamil Eelam's (LTTE), to employ conventional measures that have resulted in mass casualties and have already demonstrated a preparedness to use chemical agents, suggests that ethno-nationalist groups, while unlikely to, are still potentially capable of utilising ultra-violent measures and unconventional weapons to define an outcome.⁴³

Single Issue Movements.

Single issue groups, as the title suggests, tend to evince a primary objective or cause such as animal rights and environmental activism. As with ethno-nationalist groups, the actions of single issue groups are discriminate with the targets carefully selected, both in relation to their cause and for the publicity value. They generally limit their actions as they seek to draw on public or national support to overcome what they may see is an impediment.⁴⁴ While they

⁴² The uncorroborated report broadly details the 28 March 1992 incident where the Kurdistan Workers Party (PKK) poisoned three water tanks at a Turkish Airforce Base. The tanks reportedly contained 50 mg/l of cyanide (no further information is available on the type of cyanide, however, it is more probable to have been sodium cyanide). Chelyshev, 'Terrorists Poison Water in Turkish Army Cantonment', *TASS*, Russia, 29 March, 1992.

⁴³ Chalk, *Terrorism and Weapons of Mass Destruction Use: An Analysis of Potential Candidate Groups*, pp 12-14. The mass casualty attack refers to the 1996 assault against the Colombo Central Bank which left 86 people dead and over 1300 injured. The chemical attack refers to the 1990 attack by the LTTE against the Sri Lankan Special Forces which utilised bulk filled chlorine containers and environmental conditions to disperse agent.

⁴⁴ An example of this is found in statements by the President of the People for Ethical Treatment of Animals and expressions of a desire to covertly introduce foot and mouth across the Atlantic as a 'wake up' call for consumers. M. A. Gips, Open Border, Insert Food and Mouth, *Security Management*, Volume 45, Number Six, American Society for Industrial Security, June 2001.

may maintain radical ideological sentiments and are sometimes capable of violent action, the process for moral disengagement does not appear to extend to the use of conventional or unconventional mass casualty weapons.⁴⁵ Interestingly, it is groups such as these that Hoffman aptly describes as being responsible for the ‘amateurisation of terrorism’.⁴⁶ That is, family, friendship, similar beliefs or a collection of like-minded individuals who encompass freelance groups and part-time terrorists who act against issues, lacking much of the functionality and capacity associated with historical terrorist organisations. Despite these perceptions, this does not prohibit them from the use of lower end spectrum agents such as toxic industrial chemicals, albeit with potentially limited effectiveness. The intent, while still psychologically significant would, however, be limited in any outcome.⁴⁷

Criminal Organisations

While the focus of most of the thesis has been directed at more established non-state and terrorist organisational frameworks, in terms of reporting of use based on frequency (as opposed to effectiveness), criminal activity has most frequently been associated with the use, possession and threats of use of CBR agents since the early 1970s. While most criminal activities involving interest, acquisition or threatened use have involved ‘low end’ spectrum agents, criminal elements, possibly associated with organised crime, have selectively employed CBR agents for murder, extortion, blackmail, etc. As was noted in earlier sections of the thesis, terrorists are more frequently utilising crime to support their activities as well as the use of more extreme levels of violence. Additionally, criminal

⁴⁵ W. Lacquer, *The New Terrorism – Fanaticism and the Arms of Mass Destruction*, Phoenix Press, London, 1999, pp 49-78.

⁴⁶ Hoffman, ‘Responding to Terrorism Across the Technological Spectrum’, pp 366-368.

⁴⁷ While the Unabomber proselytised on a range of issues, he broadly fits into the single issue category. Even though he did not develop or threaten the use of WMD, he is representative of the difficulties in monitoring and interdiction of these types of groups, or specifically an individual, particularly those that operate in a more obscure and ephemeral manner. In the case of the Unabomber, he was an individual with very few associations and no established network. Exposure to anarchist literature facilitated the construction and development of his explosive mail packages. Conversely, despite his educational pedigree as a Professor of Mathematics, his explosive devices were of only limited utility in the sense that the collateral damage and casualties that resulted over a decade long mail bombing campaign, resulted in only 23 people injured and three killed. This is not to suggest he was not capable of a more lethal conventional capacity, he was, yet he would still have been constrained in the operation, technical capacity and use in even conventional methods of attack.

groups may often operate from the same geographical regions and tend to adopt similar practices in the structure of organisational networks, often employing mission orientated cells.⁴⁸ This criminal trend has been prevalent within the United States, most notably involving agents such as anthrax and ricin, over the last decade, yet Australia appears to have been quarantined so far from a large proportion of this activity. Additionally, more often the criminal activities also tend to be included within the other non-state typologies as associated behaviour. While there can be no easily defined line for criminal activities, such as those utilised by single issue groups, which are often criminal in scope, in the end it depends on the outcome sought and value of the target used, as opposed to the type of weapon employed.

Violence and Hatred as a Belief System.

This is a category used by Chalk in seeking to further qualify and capture those groups or individuals who are not clearly categorised within the scope of the other typologies. While it is not a defined organisation, the phenomenon of hate and violence, outside of that fostered and cultured within right wing and religious extremist groups, exposes itself as a visceral and peccant ideology, espousing a hatred towards an identified enemy or set of values held by others.⁴⁹ Attitudes and views are cultivated through mediums such as the Internet and anarchist literature, perpetuating enmity, with the act of violence the catharsis. The cognitive reconstrual process to justify the use of WMD for the types of personalities attracted to this belief structure, would have few inhibitions in justifying the use of CBR weapons.⁵⁰

⁴⁸ For further information see Williams, op cit., pp 117-146.

⁴⁹ Chalk, *Terrorism and Weapons of Mass Destruction Use: An Analysis of Potential Candidate Groups*, pp 12-25.

⁵⁰ An example of this category would be with Yigal Amir, the assassin of Yitzhak Rabin. An orthodox Jew, ardent Zionist and right wing extremist, he did not belong to any formal group and acted entirely alone in his assassination of Rabin. Amir claimed that religious law obligated him to kill Rabin because his leadership of the peace process was placing Israel in mortal danger by creating a haven for Palestinian terrorists. J. Post, 'Psychological and Motivational Factors in Terrorist Decision-Making: Implications for CBW Terrorism', *Toxic Terror: Assessing the Use of Chemical and Biological Weapons*, ed J. Tucker, MIT Press, United States, p 286.

Applying Non-State Typologies

There are difficulties in the over simplification of the value and belief sets for the classification of non-state groups, however, the core issue is not in the label applied but with the associative behaviour attached to the actions or beliefs within the classifications. As indicators, the classifications merely attempt to apply broad typologies against which behaviour might be typecast or indeed matched to an actual belief set. While they remain rather meaningless as stand alone profiles, when contrasted with known, associative or potential activity, particularly when included with other behavioural and activity indicators, may provide for a greater potential in profiling and preemption against non-state candidate groups.

As with a large proportion of research in the study of terrorism, the issue is rarely in the legitimacy of the theoretical model, but rather its articulation into a practical and coherent strategy of counter-measures. There will always remain few measures that can be applied against the actual act of violence itself, other than to reduce its effect. Yet while regulatory controls can be applied against specific actions, the capacity to influence or apply preemptive measures against more ephemeral concepts established as much through a 'state of mind', draws not just on the physical presence of any regulatory measures, such as the denial of access, but also through those measures that attempt to influence the behaviour and decisions of individuals and organisations. In essence, these aim to effect change in the proclivity an organisation might demonstrate towards the adoption of WMD capabilities.

Signatures and Indicators of a Proclivity Towards WMD: Usama Bin Laden and Al Qaida

In terms of recognising signatures associated with organisational violence, capability, structure, targeting and various other psychosocial influences that suggest an increased proclivity towards the use of WMD, Usama Bin Laden and the organisation Al-Qaida offers a unique, current and interesting example. As a non-state structure, it provides a profile of a group under going a transitory phase

in its development and one that displays a wide range of extrinsic indicators of intent and putative capability.⁵¹ Interestingly, the uncertainty in the analysis of this very secretive and ephemeral terrorist organisation is then further confused following military action in late 2001 and early 2002 by the United States against the Al Qaida terrorist structures in Afghanistan, suggesting that more probably any of Al Qaida's immediate WMD capabilities may likely have been seriously impaired.

Al Qaida has been linked directly and indirectly with numerous transnational terrorists attacks and criminal activities. Additionally, it has also actively projected a doctrine of hate against the west and propagated vehement anti-western teachings throughout Islamic countries.⁵² More critically, the organisation has demonstrated little aversion to the use of ultra-violence and a preparedness to inflict mass casualties. The main themes throughout Bin Laden's religious dogma are based on driving the United States Military Forces from the Arabian Peninsula and removing the Saudi ruling family from power. Usama Bin Laden's organisation, a hierarchical yet widely networked group, maintains legitimate business interests reportedly throughout nearly sixty countries.⁵³ The groups structure includes a *majlis al shura* (consultation council), a military, business, media and religious committee and even a travel office.⁵⁴

The organisation also trains like minded extremists and has organised operations for these operatives in Tajikistan, Bosnia, Chechnya, Somalia, Sudan and Yemen.⁵⁵ Bin Laden's network is also reported to have trained fighters from

⁵¹ Y. Bodansky, *Bin Laden, The Man Who Declared War on America*, Random House, New York, 2001, pp 337-373.

⁵² Cameron, 'Multi-track Micro-proliferation: Lessons from Aum Shinrikyo and Al Qaida', pp 277-310.

⁵³ A. Cohen, 'Following the Money Trail', *Time*, 8 October 2001, pp 58-60.

⁵⁴ Alexander, op. cit., p 3.

⁵⁵ Office of Secretary of State, *Patterns of Global Terrorism*, p 52. Also Alexander, op. cit., pp 30-31. Also see J. Cooley, *Unholy Wars – Afghanistan, America and International Terrorism*, Pluto Press, London, pp 80-160 & P. L. Bergen, *Holy War – Inside the Secret World of Osama bin Laden Inc*, Weidenfeld and Nicholson, London, pp 213-240.

Egypt, Libya and the Philippines.⁵⁶ In his fatwa, Bin Laden calls on Muslims to kill Americans and plunder their possessions. Any previous moral, religious or political constraints and/or inhibitions he may have exercised in applying ultra-violence, no longer appear to exist.

We don't consider it a crime if we tried to have nuclear, chemical, biological weapons. Our holy land is occupied by Israeli and American forces. We have the right to defend ourselves and to liberate our holy land.⁵⁷

We don't consider it a crime if we tried to have nuclear, chemical or biological weapons. If I have indeed acquired these weapons, then I thank God for enabling me to do so.⁵⁸

Possibly the most interesting aspect of Bin Laden is that despite all of these signatures and indicators, neither he nor his organisation has as yet used a CBR WMD capability – effectively or ineffectively. While the organisation appears to have little aversion to the use of excessive and ultra-violent force, the continued threatened use of CBR weapons, despite no demonstrated capability, appears to provide a sort of cathartic effect for the group in focussing efforts towards promoting dissent and enmity against their nemesis – the United States. While there are many factors that may potentially vitiate Bin Laden's development of a CBR WMD capability, the one key aspect is like all non-state groups, despite always having the potential to utilise CBR agents, they have yet to do so, suggesting either a technical limitation or moral constraint, or indeed both.

⁵⁶ For further information on Usama Bin Ladin and assessments of his potential, United States Office of Secretary of State, *Patterns of Global Terrorism*, p 52. For a detailed analysis of Bin Laden and Al Qaida, particularly as a comparative analysis of conventional and unconventional WMD activities and the proliferation of these technologies, see Cameron, 'Multi-track Micro-proliferation: Lessons from Aum Shinrikyo and Al Qaida', pp 277-310.

⁵⁷ J. Ismail, 'I am not Afraid of Death,' *Newsweek*, 11 January 1999, p 37.

⁵⁸ R. Usufzai, 'Conversation with Terror', *Time*, 11 January 1998.

Most importantly, the example of Bin Laden and the organisation Al Qaida does not demonstrate how much is understood of these organisations, but indeed, how little is actually known. Understanding the various organisational dynamics, values, structures, operations, and critically, what are the various indications and signatures that might be derived from any legal or illegal activities, particularly those associated with WMD use or development, are critical if states are to attempt any measure of preemption.

ANATOMY OF A NON-STATE ORGANISATION

Defining Sub-National Elements

The term non-state sweeps up a wide range of belligerents, yet at its core and what remains most significant, at least in terms of potential, are the actions of the terrorist, specifically those involving transnational terrorism. The label terrorist is a complex and often inappropriately applied term. While there is no graduated scale on which violence, technology or potential can be conveniently calibrated for the term 'non-state', the historical record reflects the most lethal and more significant capabilities are those of the terrorist. Yet as a concept, terrorism is more often mired within an 'intellectual bog of political and emotional debate with few government and academic agencies reaching consensus in its application'.⁵⁹ The term is often misused to denote an exclusive or specific association with categories of violence such as those associated with political or domestic motivations. The use of the term 'violence' then in a sense, becomes a hyponym for terrorism, however, realistically it is more likely a hypotaxis as there are wider social, political, ideological and religious dimensions than simply the consideration of the act itself. Hoffman suggests the imprecision in the use of the term has been abetted by the modern media seeking to communicate an often complex and convoluted message in the briefest amount of air time or print space which has subsequently led to the promiscuous labelling of a range of

⁵⁹ M. D. Turetzky, 'Egypt, Mubarak and the Rise of Islamic Fundamentalist Terrorism 1981-1994: An Empirical Analysis of the Mubarak Regime's Punitive Counter Terrorist Policy', *Michigan Journal of Political Science*, Winter Number 24, 1998, p 3.

violent acts as 'terrorism'.⁶⁰ Overall, the misuse of the term terrorism can be attributed to two key issues: the lack of standardisation and the selective context in which it is applied.⁶¹

In defining the application of the term terrorism, the difficulty is that essentially any abhorrent act is labelled as terrorism, regardless of the target, perpetrator or type of incident. As with the definitional frameworks for WMD and CBR, the definition of terrorism helps restrict the theoretical parameters of the threat and more critically, the targeting of effective counter-measures. That is, the more standardised the term the more appropriate and relevant the legislation formulated to support any counter-measures. Rather than simply appearing as an academic exercise in attempting to further define labels, the term defines responsibilities, intelligence and law enforcement relationships, hence the importance in ensuring standardisation and application. As a consequence, there is a clear need to codify a more widely accepted definition of terrorism, or more precisely, those actions or values that might be encompassed within the intent behind the use of the term.

The term's origins have a key role in the later ambiguity and misuse that has been associated with the use of the label terrorist. Ironically, the term was originally associated within positive origins. It was applied to the Jacobins and their agents during the French Revolution, yet its subsequent strong deleterious and pejorative associations over the last century have developed to reflect a

⁶⁰ Hoffman, *Inside Terrorism*, p 13.

⁶¹ For example, data compiled from United States Office of Secretary of State, *Patterns of Global Terrorism*, April 2001, reflects that there were 152 attacks directed against a pipeline (within the same region) in Colombia (which was owned by foreign multinational oil companies). These types of attacks are of concern to the United States and hence, their definition of terrorism interestingly includes activities involving property damage. The United States, however, does not include aspects of 'terror' within what it defines as terrorism. Ultimately this would change the collation and capture of data and even more significantly, would increase what is accounted for in the reporting of terrorist incidents. One important aspect in what is included within the data is the selective and subjective differentiation and ethnocentric biases used in the compilation of the data. For example, the attack on the USS Cole in the Middle East in 2000 was classified as an act of terrorism even though it was against 'armed military' personnel, yet while the United States includes attacks by Palestinian militia against Israeli military forces, it does not include Israeli attacks against Palestinian communities (the United States excludes acts by state parties as terrorism). While it is not the intent of this thesis to justify either position, it is important to highlight the disparity and misleading representation of data. Hence, the categorisation of CBR terrorism or bioterrorism attacks as reported through academic sources such as Monterey and even through official agencies such as the United States Federal Bureau of Investigation, must consider the further qualifications and caveats necessary prior to any analytical use.

strong notion of violence within the act itself.⁶² It is this precept that establishes intent and motivation as part of the terrorist act, that is critical. Yet not surprisingly this is not a view widely held. There are those who would argue that 'terrorism should be defined by the nature of the act, not by the identity of the perpetrators or the nature of their cause'.⁶³ As Hoffman concludes, the 'cumulative effect of this proclivity towards equivocation is that today there is no one widely accepted or agreed definition for terrorism'.⁶⁴ There is, however, merit in examining how the United States defines terrorism before looking more closely at the Australian definition. The United States State Department uses the following definition:

The term 'terrorism' means premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents, usually intended to influence an audience.⁶⁵

The definition has a specific emphasis focusing very deliberately on the political perspective and the calculated nature of the act, yet it fails to appreciate the threat and the intimidatory and predatory nature of the act itself. The definition established by the Commonwealth of Australia includes the threat of the act itself and extends the definition beyond purely political objectives to include other acts that are ideological or religious in nature. Yet the Commonwealth definition remains limited due mainly to its ambiguity in defining the actual act of violence and the subsequent failure to incorporate aspects related to property

⁶² For a detailed discussion on the definition of terrorism, its origins and various interpretations see Hoffman, *Inside Terrorism*, p 13-45. For a different perspective on the definition (and one which seeks to analyse other authors' interpretations of the definition), see B. Grosscup, *The Newest Explosions of Terrorism*, New Horizon Press, New Jersey, 1998, pp 1-20. Also United States Congress, *op. cit.*, Section Definitions and Terms of Reference.

⁶³ B. Jenkins, *The Study of Terrorism: Definitional Problems*, RAND, Santa Monica, December 1980, as cited in Hoffman, *Inside Terrorism*, pp 65-68.

⁶⁴ Hoffman, *Inside Terrorism*, p 37.

⁶⁵ The term 'noncombatant' is interpreted to include, in addition to civilians, military personnel who at the time of the incident are unarmed or not on duty. Office of Secretary of State, *Patterns of Global Terrorism*, p 6. Also see the findings from United States Congress, *op. cit.*, Section Definitions and Terms of Reference.

or collateral damage.⁶⁶ Unlike countries such as the United States, the term's use within Australia is not statutorily defined. Australia's definition of terrorism is as follows:

acts or threats of violence or unlawful harm that are intended or likely to achieve a political objective ... including acts or threats carried on for the purpose of influencing the policy or acts of a government, whether in Australia or elsewhere and acts that involve violence ... and are directed to overthrowing or destroying ... the government or the constitutional system of government of the Commonwealth or of a State or Territory.⁶⁷

The issue of terrorism is further confused when it is considered that regardless of the type or scope of the violence or the intent of the act itself, all incidents involving WMD are generally swept up as terrorist in scope. Yet ironically, regardless of the widely accepted definitions of terrorism, there are none that adequately encompass the escalatory levels of violence and increasingly criminal associations within the term. Theoretically, it should still influence the level or application of the WMD weapon as to whether the act is then categorised as

⁶⁶ Interestingly the United States Department of Defence and FBI also define terrorism differently, separating the social, cultural and criminal aspects of the definition to better suit their organisational biases. See United States Congress, *op. cit.*, Section Definitions and Terms of Reference.

⁶⁷ There are essentially two definitions of terrorism utilised within Australia. The first is the one cited here, which is drawn from the Commonwealth Standing Advisory Committee on Commonwealth/State Cooperation for Protection Against Violence and the second is derived from the Australian Security Intelligence Organisation Act (and Amendment Act). The widest utility and most accepted is that definition embodied within the former definitional framework (and which is the only one actually applied). Despite this particular definition, however, being further qualified by a widening in the interpretation of politically motivated violence, and implicit within this definition are acts or threats carried out for the purpose of influencing the policy or acts of government, it is still limited in fully encompassing the full scope of any act of terrorism. Interestingly, another qualifier within the more widely accepted national definition of terrorism is an attempt to include those acts that are intended or likely to involve, or lead to, violence. Rather than extending the application of political violence as the term then seeks, it renders it somewhat redundant in its application, reflecting historical paradigms when terrorism was more generally restricted to only acts involving separatist and ethno-nationalist acts of terror. As such, any attempt to rectify deficiencies in the definitional framework, whatever the legislative or policy vehicle used, must include those wider property, social, cultural and criminal considerations that are increasingly relevant in the changed threat environment post 11 September 2001. Australian Security Intelligence Organisation Act 1979, Section 4, and Australian Security Intelligence Organisation Amendment Act 1986, Section 4, (accessed 1 February 2001), www.austlii.edu.au/au/legis/cth/consol_act/asioa1979472/s4.html.

criminal or terrorist, yet this is not the case. Establishing labels currently tends to rely more on the associative relationship between the visceral fear of these types of capabilities and an automated cognitive response to apportion blame against more certain probabilities and established threats.⁶⁸

The critical issue in differentiating the two categories is that the criminal acts are broadly considered to be directed at a specific objective which does not extend beyond the act itself, regardless of whether the weapon is conventional or unconventional. That is, there is no significant ideological, religious or social objectives sought other than the attainment of financial gain or through the violence of the act itself. Expressed simply, where the terrorist seeks to influence an outcome, the criminal serves no cause. The paradox remains, however, that it is in a sense the definition, or more critically the scope of the violence applied within the act, that defines the application of regulatory measures and the division of responsibilities between the Commonwealth and jurisdictions.

In attempting to clarify the varying subtleties in defining an act of violence, it is critical to recognise that the use of the term 'terrorist' then shapes the criteria against which counter-actions are imposed and the context in which they are set, that is, criminal, political, religious or ideological. A lack of clearly articulated definitional criteria throughout the WMD continuum that adequately reflects the range of escalatory violence and activities, frustrates any analysis process. While ideological issues are relevant in defining such aspects as an organisation's proclivity towards violence and the preparedness to use WMD, technological issues related to CBR capabilities are not constrained simply by belief or moral structures. Hence, to reflect capacity as much as capability throughout the WMD activity spectrum, the term non-state more than terrorist,

⁶⁸ Arguably the only definition that includes elements of criminal activity is the FBI definition which while similar to other United States definitions of terrorism, includes specific mention of a social aspect which could be extrapolated to cover acts by criminal elements which are so widely reported with national trends within the United States.

better incorporates the spectrum of activities and applies to incidents involving capabilities such as WMD.⁶⁹

The Changing Dynamics of Non-State Actors

One man said to me, “Remember there will only be those who believe and those who will die. There will only be the dead and the believers”.⁷⁰

The increased internationalization, greater pervasiveness, more ephemeral motivating rationales and the hardening of physical security measures by state parties reflects changes in the dynamics and *modus operandi* of non-state entities.⁷¹ The consequence for state parties is the likelihood of decreased interdiction, fewer indicators of activity and the requirement for more pervasive and efficient security counter-strategies. These measures by state parties will, and have had, a commensurate counter-response by non-state organisations. Specifically, non-state organisations have sought to firstly, increase the capability of weapons (this includes aspects of functionality, portability, lethality, availability etc.). Secondly, they have sought to strengthen operational and organisational security and thirdly, they have developed wider and more innovative methods to circumscribe control measures – often under the pretence

⁶⁹ Given the inherent biases and already widely established and long standing views on terrorism, it is somewhat of a moot point to contend which incidents are to be included or categorised as CBR terrorist activities. It remains critical, however, to recognise a spectrum of activities associated with the term WMD which includes those activities ranging from the use of poisons delivered percutaneously or orally through to the use of warfare agents delivered as acute inhalation hazards. As a consequence, the use of the term CBR should not automatically be associated with the need or requirement for a disproportionate response – and hence the use of the label terrorist.

⁷⁰ Comments reportedly made by Benazir Bhutto to Simon Reeve in an interview regarding a purported assassination attempt that was planned by Ramzi Yousef when Bhutto was the Pakistani Prime Minister., Reeve, op. cit., p iii.

⁷¹ Canadian Security Intelligence Service, *Chemical, Biological, Radiological and Nuclear Terrorism – Report 02/2000*, Canadian Security Intelligence Service Publication, Ottawa, 18 December 1999, pp 3-7, (accessed 15 April 2000), http://www.csis-scrs.gc.ca/eng/miscdocs/200002_e.html. For an analysis of changes non-state organisational structures and their methods of operation, see Ronfeld and Arquilla's assessment on the increasing activity of netwars. The term netwars refers to societal conflict and crime, short of war, in which the antagonists are organised more as sprawling 'leaderless' networks than as tight-knit hierarchies – suggesting that many non-state organisations already actively operate on the concept of netwar capabilities. J. Arquilla & D. Ronfeld, *The Advent of Netwar: In Athena's Camp*, RAND Publication QASD(C3I), Santa Monica, 1996.

of legitimacy where possible.⁷² State parties maintain a significant capacity to influence all of these measures, most particularly those aspects concerning capability development, however, in most cases this remains unrealised. At the core of the state's capacity to effect suitable counter-measures against any non-state threats must be an understanding of all the factors within an organisation's decision-action and cost-benefit dynamic.

While all counter-measures in the end seek to influence organisational risk, the efficacy of any measures is greatly enhanced if they can be applied against specific behavioural trends and clearly identifiable beliefs. The changes with non-state organisations in the motivating rationales and belief structures has been significant over the previous decade, yet too often measures have been applied against past threats which are assumed to apply as much to the present. The evolution from ethno-nationalist, separatist and revolutionary style structures to those more ideologically and religiously focussed organisations, such as Usama Bin Laden's Al-Qaida, affirms the potential capability these shifts in non-state belief and value structures have heralded. While the advent of religious terrorism is by no means recent, with Jewish groups such as the Stern Gang and the Catholic Irish Republican Army having operated for decades, the objectives sought by these new beliefs and groups have fundamentally changed their desired outcomes and the way in which states must now respond to these changed threats.

The lack of a formal organisation within the newer non-state structures, challenges conventional interdiction and prosecutorial capacities by state parties to stem the tide of menacingly fundamentalist and extremist behaviour. The ephemeral and ill-defined nature of the structures, operating more as collectives and autonomous cells, is more suggestive of a Hydra, the multi-headed mythical monster from ancient Greek mythology, which when one head was cut off, another simply formed. This hierarchical nature, linear structure and the reduced

⁷² Canadian Security Intelligence Service, *Trends in Terrorism – Report 01/2000*, Canadian Security Intelligence Service Publication, Ottawa, 18 December 1999, pp 3-4, (accessed 2 March 2000), http://www.csis-scrs.gc.ca/eng/miscdocs/200001_e.html.

need for the media and public influence to play such a pivotal role now challenges conventional analytical paradigms.

The lack of a need for attribution, in particular, has been one of the more significant and confusing shifts throughout many non-state organisations, particularly in religious extremists. The cause for this is complex but it is premised on there being no need for material or immediate rewards in calculating the benefits of any action. Fortunately, state parties that sponsor terrorism do not think of the benefits of eternal reward and their needs are founded on more pragmatic requirements, specifically, the here and now.⁷³ In the struggle to analyse, anticipate and attempt to interdict non-state organisations, states have resorted to personalising and demonising any belligerents in attempting to identify and better understand the reasoning for any actions. This has often resulted in a loss of perspective and balance, particularly in attempts by state party governments to assuage public perceptions and awareness of the actual threats.

The basic conceptual precepts of non-state activities and *modus operandi* of organisations that were modelled throughout the 1970s and 1980s now apply less and less. The significantly different justification and legitimisation mechanisms, along with the value systems that underlie more extremist and violent movements, are at times difficult to distinguish from legitimate beliefs and practices. The terrorist attacks on 11 September 2001 changed forever the assumption that non-state actors will conform to many of the anachronistic intelligence profiles and behavioural typologies long held to. The increased capacities and capabilities of the weapons employed, as well as the preparedness to inflict mass casualties, is at odds with most of the traditional and standing assessments of terrorism – conventional or unconventional.⁷⁴

⁷³ M.D. Kanner, *The Decision Calculus of Terrorism*, University of Colorado, Colorado, 2001, pp 1-2, (accessed 21 October 2001), <http://sobek.colorado.edu/~kanner/kanner/calculus.htm>.

⁷⁴ M. Powers, *Occasional Paper Number 2 on Deterring Terrorism with CBRN Weapons: Developing a Conceptual Framework*, Chemical Biological and Arms Control Institute, Washington DC, 2001, p 12. Powers argues that through an elevated state of self-awareness there is an increased capacity for an appreciation of vulnerabilities, levels of response capability and the cost-benefit appreciation by the non-state actor. Power's model, however, is predicated on the key assumption that terrorism will develop along the path of least resistance – which does not consider some of the major technological advances in

It is the non-state organisational structure that lends itself more easily than many other behavioural indicators to attempts to establish any group's 'state of mind'. Yet what can be interpreted from an organisation's structure, particularly one that has a demonstrated capability to develop and use a WMD? Individual and organisational perceptions, most particularly one's own idiosyncratic moral, righteous and/or political reasoning, will bias any assessment. It is ultimately, however, through the firm belief that any cause is the right one that will justify the crossing of any threshold that constrains mere threats and acts of violence, to the use of more lethal WMD capabilities. The fundamental issue, however, whatever the belief structure, is in the individual and/or collective capacity for rational decision making. Most critically, the capacity by any group to apply the process of decision theory – which is ultimately the determinate in any outcome and of the effectiveness of the deterrence process.

Analysis of terrorism tends to generally be more directed at the group structure mainly because of the difficulty in elucidating a comprehensive understanding of the non-state psyche. These difficulties, when combined with the lack of reporting and established activity patterns in CBR incidents, challenge the implementation of preemptive counter-measures within a wider deterrence structure. Analysis has tended towards inductive rather than deductive analysis, more often generalising from individual anecdotes, memoirs or biographical accounts, rather than through the clear establishment of trends derived from empirical evidence. While there has been no unique terrorist psychology decoded, or a single personality pattern or trait associated with terrorism, the group, rather than individual psychology, appears to be the primary determinant

capability which groups such as Aum Shinrikyo demonstrated in the early and mid 1990s through their development and use of sarin and anthrax. The assumption that 'bombs and bullets' will remain the predominant force or weapon is derived not from the lack of resistance, but from the fact that the outcomes required can be achieved within the current capacities of existing non-state organisations. While it is not contended that bombs and bullets will remain the prevailing technology, one of the key considerations which questions the legitimacy of this assumption and will ultimately be the cause for change is the increasing requirement for wider and more catastrophic applications of violence to an increasingly desensitised public. The hijacking and crashing of aircraft on 11 September 2001 demonstrated this changing capacity. Increased security and active counter-measures may inadvertently provide a catalyst to the adoption and use of more demanding technologies, most particularly CBR capabilities.

of terrorist behaviour.⁷⁵ Hence individual perceptions, besides being indeterminate, are somewhat inconsequential when compared to those of the group and the organisational values and justification mechanisms.⁷⁶

This is not to dismiss the need to understand an individual's role and psychology within an organisation. For example, the need to understand and anticipate key figures within Al Qaida such as Ayman al-Zawahiri and Mohommed Atef, (Usama bin Laden's key finance and operational planning staff), is at the core of any capacity to interdict the organisation's activities.⁷⁷ Terrorism cannot by its nature, whether social, cultural, political, ideological or religious, be considered an individual phenomenon but one composed of several elements and strongly interdependent on the strength and dynamics of the organisation.⁷⁸ It is only through an understanding of the impact of these covariances that social safeguards and counter-measures can then be targeted and, more critically, be applied effectively.

⁷⁵ J. M. Post, 'Psychological and Motivational Factors in Terrorist Decision-Making: Implications for CBW Terrorism', *Toxic Terror: Assessing the Use of Chemical and Biological Weapons*, ed J. B. Tucker, MIT Press, Washington DC, 2000, pp 271-290. Also see Section Four, Footnote Number 9.

⁷⁶ A study of resistance groups decision-making during World War II found that it was the psychological climate within the group, rather than the external security environment, that determined group decision-making. A resistance-group leader who advocated prudence and moderation nearly lost his position to a bolder rival and thus felt compelled to lead the group into a dangerous course of action. Group dynamics influence terrorist decision making and is particularly intense in illegal underground groups. J. K. Zawodny, 'Internal Organisational Problems and the Sources of Tension of Terrorist Movements as Catalyst of Violence', *Terrorism: An International Journal*, Volume 1, Numbers 3 and 4, 1978, pp 277-285, and Post, 'Psychological and Motivational Factors in Terrorist Decision-Making: Implications for CBW Terrorism', pp 273-274.

⁷⁷ D. Eisenbery, 'Osama's Top Brass', *Time*, 8 October 2001, pp 52-53. Also see Reeve, op. cit., pp 178-197.

⁷⁸ Post, 'Psychological and Motivational Factors in Terrorist Decision-Making: Implications for CBW Terrorism', p 272, identifies that there is not a clear identifiable single personality pattern or trait associated with terrorism. An impression, however, emerged that two personality types were disproportionately represented among terrorists, especially amongst group leaders. These individuals had features of narcissistic and sociopathic personality disorders, as well as angry paranoia. They tended to be self absorbed, restless and action-orientated, with low frustration tolerance. Most importantly, they suffered from an impaired conscience and a reduced capacity to empathise with the pain and suffering of others. Angry paranoids tended to externalise their problems, idealising "in-group" and demonising "out-group". These personalities often suffered from a lack of personal, educational and professional success, seeking an outside enemy to blame for their problems.

Utility and Capability: State and Non-State Sponsorship

Analysis of terrorism and indeed other illegal activities, such as organised crime, is distinguished on the basis of resources, the level of violence, the nature of the act and importantly, its association, or more specifically, its sponsorship. The distinction of sponsorship itself reflects aspects of resourcing, funding, structure and how it operates. Sponsorship of terrorism by states has unequivocally been established and was a phenomenon of increasing concern throughout the 1970s and 1980s. Indeed, countries such as Iran for example, have been active sponsors of terrorist organisations, such as Hezbollah, from the 1980's.⁷⁹ The United States Department of State releases a list of countries that it assesses to be state sponsors of terrorism annually.⁸⁰ The classification of a country as a sponsor of terrorism has clear retributive and sanction implications, particularly in terms of trade with the United States. The provision of WMD technologies directly from a state sponsor to a non-state organisation, however, has yet to be established and is unlikely, given the pernicious outcomes and potential military action that would be taken against a state party if attribution could be established.⁸¹ While countries which have been identified as sponsors of terrorism have been associated with the provision of refuge, asylum, financing, training and the proliferation of conventional weapons, this remains quite distinct from the provision of WMD capabilities and technologies.⁸²

Most state regimes suspected of maintaining covert nuclear, biological or chemical programs are themselves conscious of their own susceptibility to exposure. The international condemnation that would be associated with any

⁷⁹ For information on Iran's nuclear, biological and chemical weapons programs, and an assessment of the capacity and development, see Office of Secretary of Defence, *Background Paper - Proliferation and Threat for Nuclear, Biological and Chemical Warfare*, p 34. Also see M. L. Moodie, 'The Chemical Weapons Threat', in *The New Terror: facing the Threat of Biological and Chemical Weapons*, eds S. D. Drell, A. D. Sofaer, G. E. Wilson, Hoover Institution Press, California, 1999, pp 5-38. The article, 'The Chemical Weapons Threat', provides an overview of programs and current developmental status of testing, production, stockpiles and capability for Syria, Libya, Iraq and Iran.

⁸⁰ The countries identified as state sponsors of terrorism include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, Syria and Afghanistan. This title refers only to the sponsorship of conventional terrorism. Office of Secretary of State, *Patterns of Global Terrorism*, pp 28-34.

⁸¹ P. Chalk, *Terrorism and Weapons of Mass Destruction Use: An Analysis of Potential Candidate Groups*, DRR-2188-OSD, RAND, Washington DC, September 1999, pp 23-25.

⁸² Office of the Secretary of Defence, *Proliferation: Threat and Response*, pp 3-6, 61-66.

proliferation of WMD technologies to a non-state group would likely result in a disproportionate response by the international community, albeit this would need to be predicated on firm evidence. The provision of direct WMD technological support, assistance or development to a non-state terrorist organisation stretches the bounds of rational behaviour, even for a 'rogue' state. The potential for attribution would bring immediate and swift international condemnation with likely military intervention or retaliatory action, ultimately providing a very strong disincentive. This is not to dismiss outright the considerations of potential.⁸³ It also remains possible that a state may act against another state using their own military forces or a sponsored terrorist organisation. This was the basis of the accusations against Iraq when it was claimed they were attempting to employ covert military forces in attempting to smuggle anthrax into the United States in 1998.⁸⁴ The distinction, at least in terms of capacity and capability between state and non-state, is then defined as much by potential.

The importance in the issue of determining sponsorship is to be derived from the need to establish the levels of capability. That is, it is likely that in the non-state

⁸³ Testimony provided throughout the trial of Japanese Cult Aum Shinrikyo members suggests they may have obtained assistance on chemical warfare agents from a senior ranking Russian, Oleg Lobov, who was employed by the Russian Government at the time. The reporting, which is based on circumstantial evidence, suggests he was acting for financial reward and not on behalf of the Russian Government. While the accusation was made by Hoshihiro Inoue, Aum's head of Intelligence, Lobov vehemently denies the accusation. It is, however, interesting to note that Kiohide Hayakawa, Aum's Minister of Construction, made five trips to Russia and evidence during the trial consisted of memorandums detailing sarin production routes which were specific to Russian routes for the production of sarin (only the Russian military uses phosphorus trichloride and chlorine rather than the more widely accepted route using phosphorus pentachloride). The report has not been corroborated and, given the veracity of much of the evidence and testimony during the trials, could be categorised as of questionable value. The conclusion, however, is that even if these materials and services were provided to the Aum via this route, it still does not constitute direct, or for that matter even indirect, state sponsorship of the Cult's activities. Cameron, G. 'Multi-track Micro-Proliferation: Lessons from Aum Shinrikyo and Al Qaida', *Studies in Conflict and Terrorism*, Volume 22, Number 4, 1999, p 294.

⁸⁴ Uncorroborated reporting in 1998 indicated that Iraq may have attempted to smuggle anthrax into the United Kingdom and/or United States covertly. Reporting throughout the media claimed that the agent was contained in perfume bottles and was to be utilised against Iraq's enemies. There was no reporting of incidents having actually occurred and it appears likely that the claims were facilitated (or indeed fabricated) by the Iraqi opposition in exile, to further influence public opinion against the Iraqi regime and Saddam Hussein. It is, however, these types of covert actions that appears more probable. That is, the use by a state party of military forces or a sponsored terrorist organisation to covertly release biological or agricultural agents against another state party. Detection or sampling provides for deniability and while little relative effort is involved, the disproportionate response by the targeted state party provides for a potentially catastrophic outcome that is difficult to achieve through the use of conventional weapons – through either covert or overt use. B. Nelan, 'America the Vulnerable', *TIME*, United States, 24 November 1997. M. Lowrie, 'Iraq Denies Plot to Smuggle Anthrax into Britain', *CNN World News*, 24 March 1998, (accessed 19 February 2000), <http://www.cnn.com/WORLD/9803/24/britain.anthrax/>.

structure, key aspects of acquisition and development, particularly when it might involve high levels of technical proficiency or access to critical materials, could only be facilitated through covert or illegal action. These types of constraints, while often imposing a more heuristic approach to development, will often depend on the resources, skills, funding or services that are more often not obtainable indigenously within the organisation. It is this aspect of dependence, particularly when considering the capability development requirements for CBR materials, that will determine key aspects of threat and risk.

The assumption that most development and capability requirements for a non-state organisation would be inchoate, is reasonable given the problems inherent within most state WMD programs in acquisition, research and development and weaponisation. Most saliently, however, is the range and capability of existing CBR and WMD activity which reaffirms the premise that development outside of the state would more probably be significantly constrained. This is not to completely dismiss any potential by states to provide CBR WMD support to groups. Any assistance would obviously increase and indeed more probably accelerate, critical acquisition, development and weaponisation processes. In the main, however, even with state assistance, capability development would more likely be narrowly directed at certain functions, activities or use. There would still be the demands within the organisation for materials, agents, knowledge and services, all required from a range of external sources, providing in a sense a program of 'deceleration'. These factors are further exacerbated when considered with the technical difficulties and frustrations that exist within covert state WMD program development, particularly in those areas concerned with weaponisation, testing and in modelling capabilities.⁸⁵ Indeed, even former offensive WMD programs from the United States and United Kingdom, struggled to overcome a wide range of scientific and engineering hurdles, despite the wide availability of resources, funding and skills.⁸⁶

⁸⁵ Department of Defence, *Military Critical Technologies -- Weapons of Mass Destruction*, United States, December 1999, Sections III and IV.

⁸⁶ E. Regis, *The History of America's Secret Germ Warfare Project: The Biology of Doom*, Henry Holt and Company Publishing, New York, 1999.

Organisational, Development and Program Networks

Like any business enterprise or project, acquisition and resource networks are a critical component in the development of a capability. This is particularly the case for a non-state organisation which would be heavily dependent on covert and asynchronous acquisition and relatively simple development routes. This is evident in the wide commercial and trade activities groups, such as the Aum Shinrikyo Cult and Al Qaida organisations, operate through.⁸⁷ The need to network amongst other non-state organisations has also been recognised and becomes important in the provision of weapons, tactics, planning and resources. In a sense, there becomes a need to recognise and learn from the lessons that have already been taught. For example, according to 'Israeli defence sources, the Palestinian Liberation Organisation (PLO) in 1981 had active cooperation arrangements with some twenty-two different terrorist organisations that had previously benefited from Palestinian training, weapons supply and other logistical support'.⁸⁸ It was also the PLO who were the first to pursue the accumulation of capital and wealth as an organisational priority. By the mid-1980s, the Organisation was estimated to have established an annual income flow of approximately US\$600 million, of which some US\$500 million was derived from investments.⁸⁹ Similarly, many groups maintain extensive international fund-raising bodies and legitimate business interests, even within Australia.⁹⁰ For example, Australia's expatriate Tamil community purportedly

⁸⁷ Cameron, *Multi-track Micro-proliferation: Lessons from Aum Shinrikyo and Al Qaida*, pp 277-310.

⁸⁸ J. Adams, *The Financing of Terror*, Simon and Schuster, New York, 1986, p 49, as cited in Hoffman, *Inside Terrorism*, p 84.

⁸⁹ *ibid.*

⁹⁰ The main front organisation for the LTTE in Australia is through the Australasian Federation of Tamil Associations (AFTA). It acts as an umbrella group that coordinates (and thereby inflates) the individual lobbying and fund-raising efforts of specific bodies such as the Tamil Rehabilitation Organisation. Most funds for the LTTE are procured from the diaspora, however, it is difficult to estimate funding and the levels of support from this source. There is reporting of major windfalls from donations following military victories. For example, following the LTTE capture of Elephant Pass in Sri Lanka in 2000, there were reports of up to \$AS 10,000 being raised in one weekend in Australia. The group also maintains legitimate business interests in wholesale freight distribution, pawn shops and gold jewelry outlets (particularly in Melbourne and Sydney). In most cases the LTTE will cover the initial start-up capital costs of the enterprise and then share in the subsequent profits with the company's ostensible owner (so-called 'ownership by proxy'). Personal communication with Dr Peter Chalk, RAND, United States dated 2 April 2001. Also P. Chalk, *Liberation Tigers of Tamil Eelam's (LTTE) International Organisation and Operations – A Preliminary Analysis*, Commentary Number 77 - Canadian Security Intelligence Service, Ottawa, 17 March 2000.

provides financial assistance to the LTTE terrorist group which is an organisation that has in the past been associated with interest in, and attempts to use, toxic industrial chemical agents.⁹¹

The accumulation of wealth and resources was practiced actively by the Aum Shinrikyo; even prior to the Tokyo subway attack in 1995, estimates of the Cult's net worth were around US\$1.5 billion. Money was collected through donations, tithing, sales of religious paraphernalia, videotapes and various other sources. Other estimates have put the figure as low as US\$100 million. Whatever the actual capital accrued, it provided a significant capacity in allowing the Cult to engage in the development of conventional and unconventional weapons systems.⁹² It facilitated the Cult's efforts towards the production of small arms, the establishment of a chemical and biological research and development program, ensured an active recruitment program and also funded a campaign to have Shoko Asahara, the leader of the Cult, run for the Japanese Parliament in 1989, albeit unsuccessfully. The Cult even today, despite extensive prosecutions, maintains a pervasive network of commercial interests operating through shop fronts selling computing hardware and religious paraphernalia as well as being awarded numerous Japanese Government information service contracts (which is estimated to turn over an estimated value of between US\$30 – 100 million annually).⁹³

Terrorist Structural and Organisational Dynamics

The organisational structure and dynamic of non-state actors has evolved to accommodate fundamental changes in tactics and technologies. Yet despite attempts throughout analysis to apply behavioural and organisational templates,

⁹¹ Personal communication with Sri Lankan Assistant Director of Police Intelligence, Mohamed Ruwaiz Latiff, dated 27 October 1999. As with many CBR incidents, even where rigorous sampling and testing has been conducted, there remains a range of countervailing views on the exact nature of the purported chemical incident, that is, whether the action was deliberate or inadvertent. While there have also been other accusations of use (see Purver, *op. cit.*, p 80), including accounts of the poisoning of tea produce, many of these incidents would be difficult to categorise as CB use and would more appropriately be labelled as criminal or public health related.

⁹² K. B. Olyson, 'Aum Shinrikyo: Once and Future Threat?', *Emerging Infectious Diseases Journal*, National Centre for Infectious Diseases, Centre for Disease Control and Prevention, Atlanta, 1999, p 4.

⁹³ Cameron, 'Multi-track Micro-proliferation: Lessons from Aum Shinrikyo and Al Qaida', pp 277-310.

there remains no systematic or structural typology that can conveniently be applied to transnational or domestic terrorist, criminal or non-state structures.⁹⁴ There are of course identifying activities which may be suggestive of, or associated with, specific activities. These may include pervasive and extensive business networks operating through legitimate front companies.⁹⁵ Increasingly money is laundered from illicit drug production, extortion and theft, with operations relying on organised crime networks and structures. Despite these widening networks of activity, however, there also appears to be a diminishing capacity to interdict, disrupt and prosecute non-state activities.⁹⁶ This is of course an assumption rather than an empirically tested insight. The fact that no person has been deported from Australia as at October 2001, for any terrorist related activities over the last decade, cannot necessarily be presumed by government to mean that there is no threat. The presumption then can only be that Australia lacks the systemic processes to detect these ephemeral and asymmetric threats, or indeed that they cannot be detected – which is not supported by counter and anti-terrorist operations outside of Australia and following the 11 September 2001 attacks.

While there is no standardised typology that provides a clear signature of a propensity within a group that might indicate the preparedness to use violent measures, there remains some indicators derived from the structural functionality within an organisation that may reflect some aspects of utility and capacity. The capacity to utilise WMD technologies and capabilities demands a wide technical proficiency, both individually and collectively. Ironically, this applies to all operations and activities throughout the spectrum of unconventional and conventional capabilities. Distinguishing indicators, however, from those necessary to develop or employ unconventional capabilities, despite the changes and innovation these technologies demand, is extremely difficult, other than after

⁹⁴ See Arquilla, op. cit., Tanter, op. cit., Cameron, *Multi-track Micro-proliferation: Lessons from Aum Shinrikyo and Al Qaida*, pp 277-310 & M. Lee, *The Beast Reawakens: The Chilling Story of the Rise of the Neo-Nazi Movement*, Warner Books, London, 1997, pp 15-120.

⁹⁵ United States Central Intelligence Agency, (Unclassified) *Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions* 1 January through to 30 June 2000, Washington DC, (accessed 15 December 2000), http://www.cia.gov/cia/publications/bian/bian_feb_2001.htm.

⁹⁶ 2000 *Monterey WMD Terrorism Chronology*. Also Tanter, op. cit., pp 2-40, 249-274.

the fact. The capacity within non-state groups towards innovation and the adoption of new technologies, interestingly, is in itself also widely contended between analysts of terrorism. Hoffman and Jenkins aver that terrorists demonstrate a predominance towards the adoption of established techniques and technologies; and indeed the historical record largely supports this assertion.⁹⁷ Organisational theory also assists in explaining many of these similar types of behaviour and is no less relevant when applied to the non-state actor. Organisations by necessity develop routines to coordinate actions throughout different units. These routines include standard operating procedures and organisational rules, and consequently, it is the organisational structure that will be one of the strongest determinants in the behavioural characteristics of organisation.

The corollary on the issue of innovation is concerned with the theory that organisations may then also commonly ‘satisfice’ their requirements. That is, rather than search for the option that maximises their utility, they may often accept the first option that is minimally satisfying. More often these same organisations may then also suffer from ‘goal displacement’, where they become fixated on the operational ‘means to an end’, ultimately losing focus on the overall objectives. This consequently leads to a form of organisational myopia where instead of taking considerations in aggregate, individuals focus on specific areas stemming from their past experiences, recent training or current responsibilities.⁹⁸ While these organisational filters will often shape the beliefs and actions of individuals, it is just as important to realise that organisations would not be expected to reinforce losing tactics and would most probably change and adapt to environments, tactics and technologies.

Innovation, however, still stands largely as a relative concept. The historical record also reflects that while trends and the use of technologies provide some predictability in development, changes throughout many of the same

⁹⁷ B. Jenkins, *International Terrorism: The Other World War*, RAND Corporation R-3302-AF), Santa Monica, 1985, p 12 as cited in Hoffman, *Inside Terrorism*, p 198.

⁹⁸ S.D. Sagan, ‘The Perils of Proliferation – Organisation Theory, Deterrence Theory, and the Spread of Nuclear Weapons’, *International Security*, Volume 18, Number 4, Massachusetts Institute of Technology Publication, Spring 1994, pp 70-72.

organisational constraints and inhibitions have also facilitated many different manifestations in the concept of innovation. Consequently, it is asserted that innovation, or at a minimum the adoption of many new technologies, is more widely exercised and effected throughout non-state organisational structures than has previously existed or was assumed.⁹⁹ For example, the terrorist attacks on 11 September 2001 against the United States, despite the appearance of simplicity, displayed wide technological innovation within the group. This is reflected in the capacities of the terrorists through their individual skill levels and prior training, along with the collective redundancy within the group's structure.

It is, however, the capacity for innovation and the adoption of technology by the organisation, that also reflects the capacity of the individual to develop and use any WMD capability. Unlike an organisation, which may potentially draw on, or have access to, a disparate range of people, capabilities and resources to achieve an outcome, the individual relies on personal limitations and constraints. That is, according to Sagan's expected-utility theory, the individual is forced into a process of risk taking through the requirement to obtain services, equipment, technologies and capabilities from outside known and established commercial, research and/or covert acquisition and proliferation networks.¹⁰⁰ The direct consequence is a significantly heightened exposure to risk through the requirement for risk taking. This in the end suggests a more defined inhibition of the capability development process, a reduced technical proficiency and

⁹⁹ While there are many cases where innovation has not been easily distinguished, similarly there have also been many cases where organisations and incidents have demonstrated a capacity to adapt and become innovative to environmental, operational and technological change (this still remains distinct from a propensity within the group or by individuals to take risks). One of the better examples is derived from right wing militia activity in the United States, where organisations have consistently demonstrated a strong capacity to adapt to government policy and utilise aspects of legislation in order to circumvent controls. They have demonstrated a proactiveness in their activities, particularly in the area of disinformation initiatives against government security forces (mainly the Federal Bureau of Investigation). It is this same innovation and adaptation that is evident in their structures, their resourcing (such as through the accumulation of weapons) and in their attempts to acquire covertly and illegally, biological materials, such as seed stocks and cultures through commercial culture banks. P. de Armond, *Right Wing Terrorism and Weapons of Mass Destruction: Motives, Strategies and Movements*, Public Good Project, Washington DC, 1999, (accessed 1 February 2001), <http://nwcitizen.com/publicgood>.

¹⁰⁰ S. D. Sagan, The Perils of Proliferation – Organisation Theory, Deterrence Theory, and the Spread of Nuclear Weapons, *International Security*, Volume 18, Number 4, Massachusetts Institute of Technology Publication, Spring 1994, p 71.

importantly, a lesser likelihood in the potential to achieve a mass casualty outcome.¹⁰¹

Other than those indicators of a capacity to more effectively facilitate innovative and technological change, in the end there remains no obvious structural signatures that suggest a proclivity by non-state actors towards the development and use of CBR WMD. The value or belief systems are in themselves some of the strongest indicators, however, establishing these qualitative and often indeterminate precepts as intelligence triggers, is difficult. Most notably, at least in terms of the more obvious behavioural and organisational indicators, are those signatures that can be derived from religious-extremist groups, where the often central importance of a specific leader is significant in the influence exerted on the group. If the leader has a predisposition towards the use of violence, which in religious groups can often be relatively easily justified and legitimised, there are often few organisational impediments that might inhibit or stop further escalation.

The threshold between threatening and actually applying violence is easily crossed. An example of this involves some right wing groups in the United States, many of which have publicly demonstrated an interest and a capability to develop a CBR capability. These right wing groups predominantly exist within a decentralised structure with no clearly established leader. This exacerbates the difficulties for intelligence and police agencies to anticipate, interdict and apply

¹⁰¹ The potential of the individual belligerent, whatever the intent, to utilise an unconventional weapons capability must be assumed to be limited. In terms of the capacity and the ability to carry out a detailed and elaborate operational plan, at least one involving unconventional capabilities, imposes such a wide range of psychological, physiological, operational and technical limitations on the individual that it must impact on the proficiency of the individual's actions. The ability, however, to utilise low and spectrum materials and many conventional weapons capabilities does still exist. That is, the capacity to utilise toxic industrial chemicals and some biological materials still exists and indeed has already occurred. Data from the United States, particularly on criminal use, or threatened use of agents such as anthrax and ricin, affirms this assertion. One of many domestic United States examples noted involves Mr Larry Wayne Harris, a well known right wing advocate who has been investigated over two 'WMD' type incidents. The first was the acquisition of freeze dried cultures of bubonic plague, which was legal to possess but obtained fraudulently, and the second involved the acquisition of an attenuated strain of anthrax commonly used for veterinary purposes. For further information on the propensity of right wing groups to utilise WMD see, P. De Armond., *Right-Wing Terrorism and Weapons of Mass Destruction: Motives, Strategies, and Movements, Hype or Reality: The New Terrorism and Mass Casualty Attacks*, ed B. Roberts, Chemical and Biological Arms Control Institute, Washington DC, 2000. For information on use of WMD by individuals see J. D. Simon, 'Lone Operators and Weapons of Mass Destruction', in *Hype or*

any judicial actions. This lack of hierarchical structure is crucial to these groups in obfuscating any likely interdiction. As a consequence, analysis and assessment of these right wing structures and their intent and range of capabilities challenges most established targeting and collection counter-measures.¹⁰²

Analysis of transnational terrorists who have demonstrated, at a minimum, interest in CB capabilities, indicates a divergence in the structures, support networks, method of financing and values inherent within the organisations. An interesting example of the variation in established organisational structures and selective application of belief sets, particularly from the more well grounded separatist and nationalist groups, involves the terrorist group that attacked the World Trade Centre in 1993. Led by Ramzi Yousef, this group was formed around a decentralised, yet hierarchical structure. Rather ironically, while the justification for the attack was on the basis of a religious duty, in the end (as terrorist incidents actually are) it also had its basis in economic marginalisation. Yousef sought to identify with the plight of the Palestinians and their struggle for a separate state and it was on this basis that he targeted the United States.

Yousef played a pivotal role and along with the extremist cleric Sheik Omar Abdel Rahman, relied on a radical interpretation of the Koran to justify the attack. Both evinced extreme feelings of enmity towards the United States, most particularly, its support of the secular Egyptian Government of Hosni Mubarak – a man both men regarded as an anathema.¹⁰³ The key conclusion is that while

Reality: The New Terrorism and Mass Casualty Attacks, ed B. Roberts, Chemical and Biological Arms Control Institute, Washington DC, 2000, pp 69-83.

¹⁰² De Armond argues that within the right the major vehicles of convergence that are cause for concern include the use of decentralised network strategies, strong anti-government propaganda, anti-abortion alliances between organisations, collaborative efforts between organisations to establish new governments and the exploitation in the fragmentation and loss of political direction within other organisations such as gun control groups and militias. de Armond, *Right Wing Terrorism and Weapons of Mass Destruction: Motives, Strategies and Movements*, p 7.

¹⁰³ The issue of Yousef's preparedness to utilise unconventional capabilities remains in contention, at least in relation to whether he actually used an agent when he bombed the World Trade Centre in 1993. A range of reports refers to the use of sodium cyanide as having been utilised within the vehicle bomb, however, there was no forensic evidence of this. B. Jenkins, 'Understanding the Link Between Motives and Methods', in *Terrorism with Chemical and Biological Weapons*, ed B. Roberts, Chemical and Biological Arms Control Institute, Washington DC, 1999, p 45, states that in his statement, the presiding judge at the terrorists' trial indicated that the bomb had contained cyanide in sufficient quantity to contaminate the

the structure of the organisation may have demonstrated an increased capacity for the use of CBR capabilities, no direct structural, causal or associative link could be established. In Yousef's case, the group had a demonstrated proficiency in the use of conventional and unconventional weapons capabilities, it had no known prior associations with other terrorist organisations and could operate freely within a known diaspora within a foreign territory. Identifying a 'state of mind' is a nearly impossible requirement, hence, the need to more actively identify capability and key proliferation and development signatures, particularly in the backgrounds of individuals with key organisational functions. This relies on the individual and collective psychological dynamic as much as it does the signatures within what can be determined of the critical path development in the non-state WMD capability process.

In terms of the dynamics of the group, most particularly the organisational cohesion, analysis is extremely difficult and can only be derived from limited historical case studies. For example, Yousef's organisation was a relatively transient grouping drawn together mainly through the charismatic personality of Yousef. Yousef had been involved in terrorism for the previous three years in Iran and Asia (albeit he had not come to the attention of western security authorities prior to the World Trade Centre attack).¹⁰⁴ Importantly, it was in the inability to detect the links with other terrorist organisations and activities, particularly in Pakistan, Iran and the Philippines, that the capacity to interdict earlier planning and development of the group's activities failed. The group only maintained a functional structure for a relatively short period of time. This was not just because of the risk of interdiction but due to the ability of the

entire structure [which is technically unlikely], however, the chemical agent was destroyed in the bomb blast. See also J. K. Campbell, 'Not Understanding the Problem', *Hype or Reality: The New Terrorism and Mass Casualty Attacks*, ed B. Roberts, Chemical and Biological Arms Control Institute, Washington DC, 2000. For a detailed examination of ideology based on a redemptive religious imperative that might compel terrorist groups to seek a WMD capability, see J. Parachini, 'The World Trade Centre Bombers (1993)', *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons*, ed J. Tucker, MIT Press, Washington DC, 2000, pp 185-206. Indeed, Parachini seeks to debunk the assertion that cyanide, or in fact any other agent, was utilised by Yousef's terrorist cell. The catalyst in all the cases was based on the statement by Judge Kevin T. Duffy, who convicted the bombers, and his very specific reference to the use of sodium cyanide. Whatever the result, the fact remains that Yousef, a well established terrorist who had received explosives training in Afghanistan, made numerous threats to use 'chemical' agents in other circumstances and even admitted to having considered the use of hydrogen cyanide in the World Trade Centre bombing, but claimed that it was too expensive.

¹⁰⁴ Reeve, op. cit., pp 135-155.

members to blend in with legitimate activity and develop domestic associations that allowed them to operate freely within the United States.¹⁰⁵

It is this longevity of the group structure, or more often the lack thereof, that appears to undermine the actual utility within many organisational structures. This is particularly highlighted in the capacity of the organisation to not just subsume innovative ideas and technology, but further develop their utility and include them within operations, which can be reflected in numerous ways within an organisation's structure. For example, in Yousef's case, the group's own electrical and chemical engineering skills, the access to domestic support (micro-proliferation and acquisition networks) within the United States and wide information collection networks demonstrated (albeit with hindsight) a strong proclivity towards unconventional weapons use not evident in other non-state organisations at the time. The key of course will always be in recognising these signatures before the fact.

It is assessed that 'the life expectancy of at least 90 percent of terrorist organisations is less than a year and that nearly half of those that make it as far as that have ceased to exist within a decade'.¹⁰⁶ Caution, of course, must be exercised in identifying the various cells and internal structures rather than the wider network. The capacity within an organisation to train, develop expertise and a corporate knowledge, and establish effective funding, acquisition and contact networks is a clear indicator of the capacity of the organisation. Bin Laden's capacity to operate unhindered in Sudan and Afghanistan in training,

¹⁰⁵The difficulty in the prosecution of the group was due in part to the disparate and unique nature of the organisation, or lack thereof, as well as Yousef fleeing the United States following the bombing. He was arrested two years later following information obtained from a computing hard disk which detailed a plot in the Philippines to blow up twelve airliners simultaneously. While the outcome of the World Trade Centre bombing could have been significantly worse in terms of its actual potential, an analysis of the group and events leading up to the bombing appears quite farcical. For example, the group was short of money in the manufacture of the bomb, which cost approximately US\$10,000 to produce. As a consequence, they in fact used discount coupons to rent the Ford Econoline van that was subsequently used as the actual vehicle bomb. Further, FBI agents apprehended Salameh, following the blast, when he tried to recover the deposit on the rental van that had carried the bomb after identification of the vehicle from post-blast analysis at the bomb site. J. Parachini, *The World Trade Centre Bombers*, pp 185-206. Also Reeve, op. cit., pp 6-44.

¹⁰⁶ D. Rapoport, 'Terrorism', *Routledge Encyclopedia of Government and Politics*, Volume 2, eds M. Hawkesworth and M. Kogan, Routledge, London, 1992, p 1067, as cited in B. Hoffman, *Inside Terrorism*, p 170.

planning and other state sponsored safe havens which were built up over a number of years, was evidenced in the group's capability to operate transnationally and with great effect against the United States in Africa, Europe and in America. Particularly when considered against the operational, technical and proliferation requirements in developing and using a WMD and the liability it imposes on an organisation, how well established the non-state entity is will be one of the strongest determinants of its ability to act effectively. While terrorist organisations such as the Palestinian Liberation Organisation (PLO), the Euskadi ta Askatasuna (Basque Fatherland, Land and Liberty – ETA) and the Provisional Irish Republican Army (PIRA) have been established for decades, there remains the possibility that, similar to the current operations of Al Qaida, loosely affiliated groupings can be formed, often obscuring their actual purpose, structure and capability. These may often have no firm structural network, are organised for a specific mission or task, or may choose to utilise a less effective CBR capability; thereby imposing a greatly reduced technical liability on the organisation.¹⁰⁷ As such, previous analysis paradigms applied to the legitimacy and longevity of non-state organisations may become less relevant, but will still broadly apply if WMD is to be employed effectively.

While the structure of an organisation may have only a limited relevance in identifying its proclivity towards violence and the use of technologies, such as CBR capabilities, the motivating rationale and belief set within the organisation does appear to represent a clear causal and associative relationship with these capabilities (potential organisational and technology signatures that might indicate a proclivity towards WMD development and use are identified later in Section Three). The value structure adopted and applied, which in its essence is representative of the preparedness to apply levels of violence internally and externally to the group, will be a direct function of capacity (as distinct from capability). Yet defining a clearly articulated value set for these organisations can be difficult. The development of a theory on the typology of organisations is increasingly difficult as most groups now espouse a variety of ideological,

¹⁰⁷ The PLO was formed in 1957 and the Basque group ETA has been established since 1959. G. Cameron, 'Multi-track Micro-proliferation: Lessons from Aum Shinrikyo and Al Qaida', pp 277-310.

religious and/or nationalistic dogmas and rhetoric.¹⁰⁸ It is then not as much the classification of the organisation, but rather the core values that are the determinants of any belief, philosophical or doctrinal structure. Albeit, the typologies applied in classification are also generally representative of these broad values.

The historical record reflects that maintaining an inflexible, strong and clearly focussed ideology or theme that incorporates hatred, whether ethnic or religious, will be one of the strongest determinants in the proclivity of an individual or organisation towards the use of mass casualty capabilities. While many non-state organisations may appear mercurial and erratic, there is most often a rationality and predictability to their actions. The difficulty is in recognising and responding appropriately to any escalatory indicators and signatures of activity. Contrary to widely held public perceptions, most non-state actors are not crazed or mad, with most actions being premeditated and discriminate in the scope and measure in which they apply levels of violence (albeit to the victims or public they may appear as indiscriminate in their actions). Additionally, tactics may vary considerably being influenced by factors ranging from ideological and religious constraints, to simply the weapons they may favour or that is most easily accessible. The selection of weapons, conventional or unconventional, are in that sense, heavily influenced by the organisation's ideology, its internal dynamics and the personalities of its key individuals, as well as a variety of internal and external stimuli that also includes issues of convenience and probability.¹⁰⁹

Tactics and Targeting: WMD CBR Terrorism

Contrary to well established public perceptions of irrationality and the unconstrained use of violence by non-state actors, the tactics and targeting

¹⁰⁸ Many of the United States based right wing groups derive their belief structure from Christian fundamentalism, however, they also espouse a wide a range of conspiratorial and anti-government themes along with very strong nationalistic and/or secular ideologies drawing heavily from strong anti-Semitic teachings. One such example is the right wing organisation, the Aryan Movement Organisation, which in the past has demonstrated an interest in chemical and biological materials and has been involved in incidents of possession and intent to use biological materials, albeit without much success.

¹⁰⁹ Hoffman, *Inside Terrorism*, p 157.

employed is influenced through many variables and decision processes, both intrinsic and extrinsic. Most notably are those constraints on the organisation's actions which are directly or indirectly applied through the belief and value principles exercised. These constraints are then further influenced by the organisational capacity to overcome imposed technical and scientific limitations, particularly in the intent to develop and use a capability such as a WMD. As identified earlier in the thesis, a core aspect in the analysis process lies in attempting to identify and understand core organisational values and those internal and external violence thresholds that influence the organisation's actions. Jenkins, a well established terrorism analyst for over two decades, asserts that:

Terrorists appear to treat violence as volume control, not an on/off switch. They turn it up high enough to cause shock and alarm but not high enough to induce widespread public revulsion and unleash government crackdown.¹¹⁰

Jenkin's theory would have been considered irrefutable or immutable during the 1970s and 1980s, however, it is no longer an infallible principle that can be applied to non-state actions. Developing trends in activities have been marked by more deliberate and significant increases in the lethality and the preparedness to use greater levels of violence. In addition, it is often only through processes of post-blast analysis and forensic investigation that a clearer association may be identified with a specific non-state organisation – if any ever at all. The increasingly indiscriminate nature of non-state attacks may also be reflective of a decreasing threshold in the consciousness of those values that the target may be representative of. For example, the Kenyan and Tanzanian nationals involved in the 1998 East Africa bombings were not specifically targeted, it was the United States embassy and its people. The preparedness, however, to seemingly take action indiscriminately (as opposed to the discriminate nature of the actual

¹¹⁰ B. M. Jenkins, 'Understanding the Link Between Motives and Methods', *Calibrating Risks and Responses*, ed B. Roberts, The Chemical And Biological Arms Control Institute, Washington DC, 1997, p 46.

targeting), still legitimised the selection of targets and method of attack to the terrorists. That is, the intent of the group to target United States interests in an area of greatest opportunity with a minimal prospect of interference, interdiction, and with the greatest likelihood of success (when considered against issues of vulnerability, access, security etc...) was met by choosing an apparently indiscriminate target.

Diagram 2 – Critical Non-State Infrastructure Targets¹¹¹

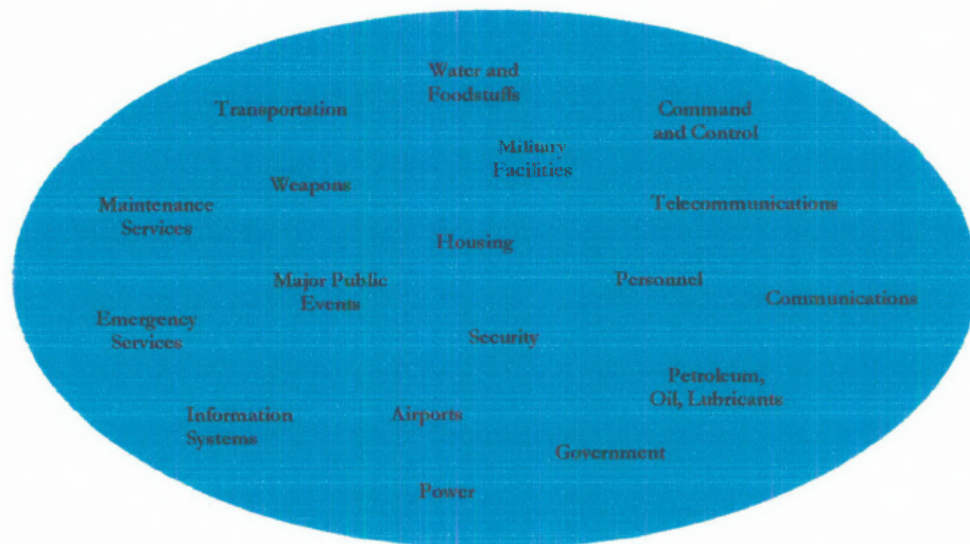


Diagram 2 provides an overview of the likely critical infrastructure targets available, yet there remains no clear formula or standard for the projection of targeting, which in many cases can be as much a component of probability and opportunity, as it is detailed planning. The use of a weapons system, however, will obviously influence the capacity in the level of violence that is able to be applied – specifically the outcome. This is highlighted in the complex and often technical demands required for the employment and use of any CBR WMD capabilities. Optimally, the non-state actor would seek to achieve an acute inhalation hazard over the longest period of time. Given the requirement for specific environmental conditions, this result would only be successful when targeted against highly concentrated groups of people in areas with restricted

¹¹¹ P. Mann, 'Government and Industry Alliance Urged Against Cyber Threats', *Aviation Week and Space Technology*, 13 July 1998.

entry, egress and, critically, a contained environment with an airflow of between three to five knots.¹¹²

Tactically, many terrorist organisations have adapted and developed innovative methods to overcome countermeasures that may be directed against them. For example, heightened security and the physical hardening of facilities is most probably responsible for the IRA development and use of a standoff delivery platform. It employed a portable and covert mortar system which was then used, unsuccessfully, against Number 10 Downing Street in 1991.¹¹³ Following numerous frustrations and failures, the most notable being the targeting of the British Prime Minister Margaret Thatcher, the IRA then initiated wide ranging technical innovation in safety, arming and initiation systems in the construction of improvised explosive devices in an attempt to overcome British Army electronic countermeasures.¹¹⁴

The pressures and demands by state parties to identify likely targets has been exponentially increased since the 11 September 2001 attacks against the United States. The potential to place an improvised explosive device in close proximity to a building has been reduced with increased security and the hardening of facilities with anti-personnel and anti-vehicular measures. Yet the attack from the air at a hardened facility such as the Pentagon by suicide hijackers could only be regarded as innovative and catastrophically successful. The use of such a simple method of attack, while surprising, should not have been. The salient lesson from these actions is that caution must also be exercised in unnecessary speculation on new and developing technologies. The utility of toxic industrial

¹¹² Department of Defence, *Military Critical Technologies – Weapons of Mass Destruction*, Sections III and IV.

¹¹³ United Kingdom House of Commons, *Hansard Debates*, dated 7 February 1991, Column 413, Speaker Mr Kenneth Baker – The Secretary of State for the Home Department. Three projectiles were fired from a mortar at Number 10 Downing Street from a white transit van. One of the projectiles landed in the back garden, several windows were shattered and a policeman was injured. There were no other injuries or structural damage sustained. The mortar attack, which was the responsibility of the Provisional IRA, heralded both a significant change in tactics and targeting of the organisation and was the first use of a mortar on the British mainland.

¹¹⁴ For further analysis regarding innovation within terrorist groups, specifically the IRA, see Hoffman, *Inside Terrorism*, pp 180-184. Also see B. Hoffman, 'Responding to Terrorism Across the Technological Spectrum', *Terrorism and Political Violence*, Volume 6, Number 3, Frank Cass Publishers, London, Autumn 1994, pp 366-390.

chemicals, and indeed a wide availability of explosives and conventional weapon systems, increasingly provides non-state actors with a wider and more lethal selection of weapon platforms, and consequently targets.¹¹⁵

The infinite availability and permutations in technologies and weapon systems available cannot be controlled. Yet in better understanding associated capabilities, limitations and the inherent risks within non-state organisational structures and in the technologies they select, states may be able to better effect and apply counter-measures.¹¹⁶ There is, however, no conclusive archetypal terrorist organisation or weapon. From the taking of hostages, aircraft hijackings through to the kidnappings and specifically targeted bombing campaigns in the 1960s, 1970s and early 1980s, to the appearance of more indiscriminate large scale attacks against populated urban, commercial and government targets, the only aspect that has remained a central theme in the attacks by non-state actors is the cynosure in the violence of the act itself.¹¹⁷

¹¹⁵ C. Williams, Director of Security Intelligence Australian Defence Force, *Terrorism and Crime*, Presentation to Australian National University dated 8 March 2000. Williams assesses that terrorists may move into a range of more innovative technologies, particularly in relation to delivery platforms, vehicles and systems. In particular, the use of rockets and missiles is an area of both great vulnerability and opportunity. For example, the Soviet SA-7 and SA-13 is readily available on the international arms market for a price, with reportedly even United States supplied Stingers being available in Afghanistan on the black market. Williams also quotes a discussion with Mr Bruce Stark from the University of Western Sydney who stated that there were 58 Surface to Air Missiles hits on civil aircraft between 1968 and 1997, and state parties remain increasingly vulnerable to this type of discrete, covert and potentially effective type of attack. These delivery systems, particularly for rockets and missiles, have increased significantly in lethality and availability, so much so that it is believed that a SAM was responsible for the crash in 1998 in Angola of a C-130 aircraft in which Melbourne barrister Patrick Luckman was killed. The newer versions of the SAMs, while being considerably more lethal, are also far more expensive, however, to a well resourced organisation, such as Usama Bin Laden's, finances may not be as great an obstacle to overcome.

¹¹⁶ While there is a range of statistical profiles and economic schedules available on legal conventional arms transfers, it still remains impossible to accurately track volumes and or destinations of artillery pieces (less than 100mm calibre), support items, services and components or production technology. There is no data, at least of any veracity, available on the covert or illegal transfer, transshipment or movement of illegal explosives either as a class of weapon or geographically (regionally or globally). However, the proliferation onto the open market of illegal/black market small arms and various other weapons systems from the Former Soviet Union throughout Europe, Africa and the Middle East is estimated to be a multi-billion dollar business. Hence, the prospect and capacity to regulate these capabilities will never be a complete science. While there does exist a range of normative practices which seek to control proliferation of these capabilities, the prospects of any real and significant change, unless there is major structural reform in regulatory and control practices, it remains unlikely that control can be ever effectively exercised in the proliferation of these materials.

¹¹⁷ The wide availability of primary explosives in particular suggests the continuing probability that these materials will remain as key weapons/capabilities within the non-state armamentarium. Much of the difficulty in the use of explosives lies in the availability of the secondary explosives which incorporates leads, boosters and detonator systems which are required to initiate explosive trains and/or cause the actual detonation. Primary explosives, such as ammonium nitrate fuel oil and other nitrate based

A CASE STUDY OF THE JAPANESE CULT AUM SHINRIKYO: A PROCLIVITY TOWARDS MASS DESTRUCTION¹¹⁸

The Cult: A Sheep in Wolf's Clothing

A study of the Japanese Cult Aum Shinrikyo is, by its nature, an examination of the Cult's *coup de grace*; the 20 March 1995 release of the nerve agent sarin on a Tokyo subway system which resulted in twelve deaths.¹¹⁹ There are a wide range of theories and assessment about the incident, specifically regarding the Cult's actual capability, suggesting it was a portent of changing patterns in terrorism and would herald increases in proliferation and the use of CBR WMD capabilities by non-state groups. While this has yet to eventuate, there was a threshold crossed in that it clearly demonstrated that a group could overcome the

explosive compositions are utilised as the primary explosives by non-state elements due to the wide availability of the materials, the difficulty in detection and the simplicity in the use of the precursors (requiring relatively little technical knowledge of explosives to prepare). A critical process in the preparation of fuel oil explosives is in the protection of the main charge which is due in part to the hygroscopicity of the materials and in the placement of the booster/detonator. Incorrect placement normally results in deflagration (partial initiation where only sections of the main charge detonate or only combust) or a complete failure (particularly if the main filling charge has been exposed to any moisture).

¹¹⁸ The material utilised within this overview of the Cult's activities is drawn from a range of sources. There are numerous Internet sites which maintain extremely comprehensive listings of all the openly published reporting. This includes all the press articles, Japanese and Western, relating to the Cult and the conduct of their activities. The two main sites used for this research were the Apologetics Research Site and the Centre for Studies of New Religions (CENSUR), (accessed November 2000 to May 2001), <http://www.gospelcom.net/apologeticsindex/a06.html> and <http://www.cesnur.org/testi/auml.htm> respectively. Other key publications included the translated text of S. Ishikura, (Professor of Science at Tokyo University), *Aum's Biological and Chemical Weapons*, Kodansha Press, Japan, 2000. Ishikura had been assisting the Japanese Police in technical issues and analysis since the Cult's first forays into criminal and terrorist activity in the early 1990s. Other key publications included D. E. Kaplan and A. Marshall, *The Cult at the End of the World*, New York Crown Publishers, 1996 and the Australian Institute of Criminology, *The Australian Federal Police Investigation into Japanese Sect Activities in Western Australia*, R. Crothers, 1996. For a detailed chronological summary of the Aum's activities see Monterey Institute of International Studies, Chronology of Aum Shinrikyo's CBW Activities, March 2001, (accessed 11 May 2001), http://cns.mii.edu/pubs/reports/pdfs/aum_chrn.pdf. Another key text, particularly in relation to the network established by Aum, was based on Cameron, 'Multi-track Micro-proliferation: Lessons from Aum Shinrikyo and Al Qaida', pp 277-310.

¹¹⁹ The incident claimed 12 deaths and over 5500 casualties, however, estimates suggest that only 700-800 of these people were actually injured or exhibited injuries that were symptomatic of organophosphorus poisoning (nerve agent). The other casualties that were treated were more than likely psychosomatic. While most of the actual casualties (or those directly affected from exposure to sarin) were from the first responders, confusion in many aspects of the initial diagnosis was possibly as much a result of the medical teams lack of familiarity with treatment protocols for nerve agent poisoning. Interestingly, the initial systems for minor nerve agent poisoning are similar to symptoms that might be associated with hysteria or indeed hyperventilation (induced from a stressful situation). For example, shortness of breath, lack of bladder control, distressed state, narrow vision (miosis is one of the first symptoms of exposure to nerve agent) and involuntary movements (in nerve agent poisoning, this is due to the action of the cholinesterase). D. E. Kaplan, 'Aum Shinrikyo (1995)', in *Toxic Terror: Assessing the Terrorist Use of Chemical and Biological Weapons*, Ed J. Tucker, MIT Press, Washington DC, 2000, pp 207-226. Ishiura, op. cit., pp 5-51.

moral constraints on the use of these types of weapons. Additionally, it demonstrated that a determined organisation could re-structure and re-prioritise in order to develop a technical proficiency, in this case, one which involved the capacity to develop and use CB agents as weapons of terror.

The purpose of the analysis of the Aum's activities within this thesis is not to further detail the litany of exploits of the Cult. Rather, it is to profile their acquisition apparatus and the extensive structure they utilised to facilitate the development of a chemical and biological capability. Specifically, analysing the organisation's structure in the context of those functional and psychosocial indicators identified earlier in the thesis. There already exists a wide array of material on the Cult's activities, their organisational structure and the types of agents they were interested in. Yet this case study also has a secondary purpose, of highlighting the risk to Australia from these types of groups from the potential of proliferation through legal, illegal and covert mechanisms. The core issue remains that the Cult was able to facilitate access to sensitive technologies and dual-use capabilities unhindered and through the pretence of legitimate business. The overview of the Cult's activities includes identifying those mechanisms that contributed to the Cult's adoption of a chemical and biological capability, and as importantly, what indicators there were in the escalatory period prior to the use of agent.¹²⁰

The complication in the process of reporting on the Cult, or more specifically accounting for all their activities, is the proliferation of misinformation, misinterpretation and incorrect analysis. The Japanese authorities were slow in responding to reports of escalating activity and seditious behaviour by Cult members. Additionally, conflicting testimony from various Cult members over the course of the court trials in the late 1990s has ensured a consistent stream of processed propaganda and misinformation to those willing to accept at face

¹²⁰ For one of the earliest and most detailed accounts of the Cult's activities, see Kaplan, *op. cit.*. As the book was written in the period 1995/1996, key aspects of the Cult's capabilities and activities are not included in the text. For example, the analysis of the Cult's biological warfare agent development program, much of which still remains uncorroborated or accounted for, does not of course contain large sections of testimony from Cult members that occurred post 1996/1997 and during the subsequent Japanese court proceedings where the testimony from Cult members was critical in further establishing the veracity of many analysts earlier assumptions and claims of capability in the Cult.

value the credibility of the information provided. Misinformation and propaganda were inculcated throughout all of the Cult's activities.

Ironically, it has only been through the full development of the trials some five years after the actual Tokyo subway attack that there has been a better understanding of the full nature and scope of the capabilities and motivating rationales utilised by the Cult. This has been highlighted specifically in the trial of the charismatic Cult leader and guru, Chizuo Matsumoto, also known as Shoko Asahara, which commenced in April 1999. His trial, the Japanese authorities have suggested, may take up to ten years given the slowness of the Japanese judicial system.

The process of analysis of the Cult's belief structure and activities is an abstruse exercise. The ideology and religious philosophies they espoused were rhetorical and self-exculpatory, being drawn from Asahara's own idiosyncratic interpretation of Buddhist, Hindu and Yoga teachings. The teaching extended to apocalyptic and millenarian claims of special powers from the sublime to the extreme, including claims of levitation and visitations from god. The Cult claimed membership of around 10,000 Japanese and approximately 30,000 Russians. While the figures will always remain uncertain, what is certain and unique, is that the range of their recruitment extended to professions involving academics, businesses leaders, computing specialists, medical practitioners, lawyers, microbiologists, physicists, chemists and public servants.

The Cult was, and still continues to be, funded with proceeds from books, computer software, computer hardware and funds gained from 'donations' provided from Cult members. This has in the past involved the subsumption and forfeiture of members' property and assets into the organisation. Particularly in the period prior to the subway attack, members' identities were forfeited and they were told that non-believers were enemies and their survival was dependent on the Cult. Hence, a strong 'fortress Aum' mentality developed and to protect themselves it was necessary to attack those they perceived as a threat. As a consequence, they conducted abductions, confinement, assault and murder to further their own perceived survival. Operating on a value system that suggested

death was a transition to an enlightened existence, they showed a complete disregard for the prospect of retaliatory action by the Japanese Government or its security elements. These factors, along with a greater propensity towards risk taking, organisationally and individually, propelled the Cult further along the path of self destruction. This type of activity then in a sense, led to an inevitability in the Cult's need for a mass casualty capability, albeit they were not able to ever realise its full potential.

The Cult's religious status within Japanese society established it as an inviolate entity. It was granted official status in 1989 by the Tokyo Metropolitan Government. This act was instrumental in facilitating the Cult's amassing of incredible wealth and access throughout Japanese society. This was also facilitated through tax relief via Japan's Religious Corporation Law. This law prohibits the Japanese authorities from investigating the religious activities or doctrine of a group. The Cult was granted official recognition by the Japanese Government (and all the entitlements that are associated with this). Estimates of the Cult's wealth were as high as US\$1.5 billion, with business interests operating throughout a range of globally based businesses, most prolifically within Japan and Russia. This wide business network also played a key role in aggressive and specifically focussed recruitment and covert procurement of illegal weapons and dual-use materials.

The structure of Aum reflected their apocalyptic and millenarian values in that they perceived themselves as establishing a 'pure' government. This was to be made up from the survivors of a nuclear global holocaust, which they stated, would be between Japan and the United States and was at the time prophesised for September 1998.¹²¹ As such, they modelled the Cult on the organisational structure of the Japanese Government and its ministries. The ministries were extensive and hierarchical in their structure and ranged from construction, science and technology, finance, public relations, healing and intelligence.

¹²¹ When 1998 passed without event, Asahara foretold of the apocalypse occurring in 1999, and then 2000. His proselytisations now suggest 2003. The Cult is nothing, if not flexible, in Asahara's vision for the future where he was forecasting the end of the World coming about as a result of World War III. The Cult, along with changing its name in an attempt to re-invent itself as 'Aleph', now envisages the apocalypse as occurring as a consequence of a natural disaster, most probably an earthquake or volcanic eruption, yet it still maintains its vision as the chosen few who will survive the apocalypse.

Three of the more well known ministries and which were directly involved in the Cult's WMD development activities were as follows:

Ministry of Defence. The Ministry was headed by Tetsuya Kibe who was responsible for security within the Cult. Reportedly the action squads, which were part of this ministry, were responsible for internal disciplinary action in the Cult. Kibe was involved in the procurement of arms from Russia and extracts from his notes indicate the intent to purchase Russian main battle tanks, with Japanese authorities assessing the intent behind the Russian connection was to extend Aum's activities to the brokerage of arms from Russia to China.¹²²

Ministry of Health and Welfare. The Ministry was headed by Seiichi Endo who it was reported was responsible for the Aum's biological capability. Endo was a genetic engineer and was one of the Aum members who visited Australia in September 1993 and was charged under the Dangerous Goods Act.¹²³

Chemical Arms Unit.¹²⁴ This Ministry was headed by Masami Tsuchiya who was an organic chemist and responsible for the development of the chemical research and production facilities, such as those at the Satian 7 facility (also referred to as the Number Seven Satian facility and Satyam 7 facility), which basically became Tsuchiya's private laboratory. Kaplan reports that it was Tsuchiya who was responsible for suggesting the Cult use sarin. There remains wide contention over the actual impetus and reason within the Cult for adopting the use of chemical warfare agents.¹²⁵

¹²² Kaplan, op. cit., p 110.

¹²³ *ibid.*, p 128, Australian Federal Police, op. cit., pp 2-5.

¹²⁴ The Cult also actively sought to acquire and develop explosives. They reportedly succeeded in synthesising a range of explosives which included trinitrofluorene (or TNT), cyclonite (or RDX) as well as large quantities of smokeless powders. Hayakawa also had initiated plans for the development by the Cult of an explosives factory. Other purchases included four tons of potassium nitrate, five tones of sulfur, and charcoal – the key ingredients for black powder. The smokeless powders were to be used for the ammunition production at the Cult's firearms production facility at Clear Stream Temple (Asahara had ordered that the first prototype of the AK-47 was to be built at this facility by the end of 1994). Kaplan, op. cit., pp 151-152.

¹²⁵ Kaplan, op. cit., pp 85-86.

Indications of a Proclivity for Violent Action

Prior to the 1995 Tokyo subway incident, the Aum had established themselves as an organisation with a propensity towards the use of violence to further their cause. While much of the focus on the Cult's activities has been directed at the well publicised Tokyo subway sarin gas attack, there were other incidents involving the Cult's CB capabilities, albeit with significantly less impact. The most notable of these was the Matsumoto incident on 27 June 1994. Similarly to the subway incident, this involved the release of sarin which resulted in seven deaths.¹²⁶

While there was an increasing tone and advocacy of violence within Asahara's teachings from the late 1980s, the threshold propelling the Cult to deliberate and extreme acts of violence reportedly first occurred as early as 1989. A lawyer, Tsutsumi Sakamoto, along with his wife and son, were abducted and murdered because he was involved in a legal case being brought against the Cult.¹²⁷ This was a consistent theme in the Cult's risk taking where they actively and violently eliminated opposition through subversion, blackmail and murder. Surprisingly, between 1991 and 1995 there were reportedly over sixty people who had escaped the Cult's facilities in Yamanashi and informed on the group to the authorities, citing a range of illegal activities the Cult was involved in, yet no action was taken by the authorities.¹²⁸ These reports, along with a litany of other complaints from locals living near Aum facilities, particularly the Satian 7 facility, of putrid smells, dead foliage, chemical leaks and respiratory protection

¹²⁶ The Matsumoto incident was significant in that it was a clear indicator of the Cult's activities and intentions, yet despite Japanese authorities investigating the incident (along with a range of other criminal activities associated with the Cult), they failed to curb further development of any of the Cult's capabilities – conventional or unconventional. For further detail of the Matsumoto attack see Kaplan, *op. cit.*, pp 137-146.

¹²⁷ Sakamoto was an attorney in Yokohama who was killed, along with his wife and one year old son, through an injection of potassium chloride. The Chief Physician of the Cult, Tomomasa Nakagawa, later admitted to the murders. Sakamoto was representing a case against the Aum on behalf of 23 parents of Cult members. Kaplan, *op. cit.*, pp 37-41.

¹²⁸ J. K. Campbell, *Research Study - Weapons of Mass Destruction and Terrorism: Proliferation by Non-State Actors*, United States Department of Defence, Washington DC, 1997, p 26.

being worn by Cult members working at the facility, failed to compel the Japanese police to act.¹²⁹

Development and Operational Systems

Coincidentally, in the period preceding the Tokyo subway attack, the Japanese Ministry of International Trade and Industry regulated approximately sixty chemicals which it considered could be utilised as precursor chemicals for a chemical warfare agent.¹³⁰ The regulatory controls, however, were all focused on the export of prohibited goods rather than the regulation of chemicals domestically. Essentially anyone within Japan who worked for a university or routinely handled chemical products could place an order with a reagent sales store and have it filled the following day.¹³¹ Internal regulation of chemicals within Japan during the Aum's acquisition phase from 1993 – 1994, was through the 'Poisonous Substances Control Law' which was administered by the Japanese Ministry of Health and Welfare. Substances were classified as 'highly dangerous chemical substances', 'special poisonous substances', 'poisonous substances' and 'deleterious substances'. In effect, all that was required for the purchase of these chemicals was a stated reason and a signature.¹³² Purchasers were obligated to comply with a variety of control measures, yet as is the case in Australia, most of these related not to security, but to occupational health and safety. As a consequence, they were directed more at transport and storage restrictions. Additionally, the designation of a chemical as a poisonous or deleterious substance only regulated those chemicals that were utilised widely or had a commercial value. For example, agricultural chemicals and chemical materials, which did not include all hazardous chemicals.¹³³

¹²⁹ Kaplan, *op. cit.*, p 148.

¹³⁰ These were the first stages of the introduction into force of the international Chemical Weapons Convention (CWC) and the process of criminalisation of the domestic measures for CWC Scheduled chemicals. These controls should not to be confused with the later introduction of legislation by the Japanese, referred to as the 'Sarin Act', following the Aum's Tokyo subway attack in April/May 1995.

¹³¹ Ishikura, *op. cit.*, pp 42-61.

¹³² *ibid.* Under the Poisonous Substances Control Law within Japan, all poisons are classified as 'highly toxic special poisonous substances' [sic], and must be pigmented or have a mustard smell added.

¹³³ Belatedly, the Japanese Government introduced in late March 1995 the 'Law Concerning Prohibition of Chemical Weapons and Regulation of Special Substances' and in May 1995 (promulgated 21 April 1995) the 'Law Concerning Prevention of Human Casualties based on sarin'. In essence, the laws prohibit the

The Cult's program for the development of a chemical warfare agent demonstrates the versatility and technical innovation by the group, along with the scope and depth of resources it had available. Yet the impetus to develop a chemical warfare agent was purportedly initiated in 1993 following the Cult's failure to develop and release a biologically viable organism. There had been difficulties in particular in achieving effective production and an acute inhalation hazard.¹³⁴ The change in focus while at Asahara's direction, was facilitated with the frustration in the lack of progress in the biological program and the need to develop what they perceived was a 'less sophisticated' weapon – sarin nerve agent.¹³⁵

While most of the focus has been on the Cult's development and use of chemical and biological agents, they also amassed a significant cache of conventional arms. This included production machines, computer controlled lathes and steel fabrication equipment, which they used to produce their own variant of the Russian AK-47.¹³⁶ They had acquired a Russian helicopter and spray kit and were reportedly attempting to develop technology for a remotely piloted vehicle. These capabilities, along with deliberate recruitment and training programs, combined with drugs, mind control techniques and isolationist therapies for Cult members, suggested that well before the Tokyo subway attack, the development of an offensive and sophisticated attack capability was already well progressed.

propagation, manufacture, import, transfer, purchase, possession or production of sarin and/or toxic substances stronger than, or similar to, sarin.

¹³⁴ The date of the apparent release of biological agent, reportedly anthrax, is unclear, as is a lot of the information obtained from the Cult (normally as evidence during the ongoing trials) on their biological development program. The development of the biological program, according to testimony from Seiichi Endo, was specifically directed by Asahara. Asahara intended to utilise the biological agent in an attack on the Japanese Royal family on the day of the wedding of Prince Naruhito and Masako Owada. Interestingly, the agent and dissemination system were reportedly not ready on the day, however, it has been speculated that this may have been deliberate on the part of Endo, or that he had discovered too late into the research that he had been worked on a vaccine strain of anthrax. See M. Leitenberg, 'The Experience of the Japanese Aum Shinrikyo Group and Biological Agents', in *Hype or Reality: The New Terrorism and Mass Casualty Attacks*, ed B. Roberts, Chemical and Biological Arms Control Institute, Alexandria, 2000, pp 159-172.

¹³⁵ Ishikura, op. cit., pp 41-60.

¹³⁶ The production and machining equipment was reportedly acquired when the Cult bought out the Okamura Ironworks. Cameron, 'Multi-track Micro-proliferation: Lessons from Aum Shinrikyo and Al Qaida', pp 277-310.

Acquisition Networks

The Aum had a sophisticated acquisition, procurement and development network that was both well funded, resourced and operated under a veil of legitimate business activity. The pervasive nature of the commercial interests, along with their activities in Russia, United States, Australia, Europe and reportedly North Korea, allowed for the legal and illegal procurement of precursors, equipment, conventional weapons and delivery systems. A large portion of their acquisition activities was facilitated through the company, Maha Posya Incorporated, which was a registered trading company in the United States, Moscow and Japan. Maha Posya legitimately traded in computing and agricultural equipment and it was through this company that Aum acquired their chemical and biological capability. Despite these extensive networks, the Aum acquired most of the ingredients and equipment for their chemical weapons program from the domestic Japanese market. From early 1993, they created several front companies: Hasegawa Chemical, Bell Epoch, Refined Optical and Shimomura Chemicals.¹³⁷

The Aum also founded a New York office which operated as a buying agent through which they procured respirators and filters from the Lydall Technical Paper Company in New Hampshire in 1994. The respirators were purportedly for use in their 'clean rooms'.¹³⁸ Interestingly, Shigeyuki Hasegawa, who was the director of a number of these companies, also held a degree in pharmacology. He became skilled at synthesising chemicals and when certain chemicals were unavailable, he would simply order them under different trade names, as different components, separately or from different distributors, essentially taking the path of least resistance and ensuring it was more difficult to track.¹³⁹

¹³⁷ Cameron, 'WMD Terrorism in the United States: The Threat and Possible Countermeasures', pp 94-96.

¹³⁸ *ibid.* p 93. The Cult also sought, but did not receive, sophisticated computer software for molecular modelling from firms in Oregon, California and Missouri in the United States.

¹³⁹ Kaplan, *op. cit.*, pp 95-98, and Cameron, 'WMD Terrorism in the United States: The Threat and Possible Countermeasures', pp 93-94.

The companies were ostensibly legitimate medical supply and chemical firms and were able to purchase a broad range of dual-use bio-chemicals and equipment. The Aum were also active in illegal drug production. This included the production of hallucinogens such as lysergic acid diethylamide (LSD) and a range of other stimulants. One of the aspects of the Cult's activities which remains unaccounted for and has been the subject of wide speculative analysis has been the Cult's activities within Russia. While the Cult maintained a large following, the issue of greatest contention remained the scope and level of involvement of key Russian officials in facilitating procurement opportunities for the Cult.

Legitimate commercial connections with Russia were largely responsible for most proliferation activity from Russia, particularly in regard to the Cult's attempts at the production of small arms and ammunitions. The Cult had also maintained documentation detailing an intent to procure new and used Russian tanks, fighter aircraft and nuclear weapons technology.¹⁴⁰ The diffusion of WMD dual-use technologies throughout the open literature allowed the Aum to exploit technical book stores, university libraries and the Internet. It was through this facade of legitimacy that the Cult acquired its range of technologies and equipment, allowing them to circumvent Japanese domestic criminal and industry regulatory measures.¹⁴¹ The Cult, in pursuit of these and other technologies, also actively sought to penetrate industries engaged in the development of dual-use technologies, which included Aum members working

¹⁴⁰ There have been continuing reports of intent and interest in nuclear technologies. These have mainly been derived from activities involving the procurement of chemicals that could be utilised for the extraction of uranium from mining processes, there has also been statements, however, of attempts to procure nuclear weapons. This reporting, along with a considerable amount of media coverage of the Cult's biological capability, remains uncorroborated and is of questionable veracity.

¹⁴¹ Cameron, 'WMD Terrorism in the United States: The Threat and Possible Countermeasures', pp 92-96. Cameron suggests that the development process was possibly derived from illicit publications such as the 'Uncle Fester' type manuals available within the public domain. He also attributes other aspects of development to material drawn from more legitimate sources such as the National Diet Library, which contains material on chemical weapons development. As with much of this type of material and all good research, it was most likely drawn from a range of sources, as there are very limited actual production and development processes (as opposed to those that are claimed to be) available in the open literature. Interestingly, there had always been claims that a senior Russian, Oleg Lobov, passed the production processes to Aum and of the many variations in the production of sarin, Cameron, citing a press article by Yomiuri Shimbun, 'Aum Made Sarin Using Russian Method: Police', *The Daily Yomiuri*, 23 April 1995, which asserts that the formula used by the Aum involved phosphorus trichloride and chlorine, which was only utilised by the Russians, rather than the route which traditionally uses phosphorus pentachloride.

within government and industry and deliberately exploiting their privileged positions.

Figure One – Precursor chemicals recovered from the Banjawarn station that were reportedly utilised for ‘experiments for the good of humankind’. The exact purpose of the experimentation remains unclear.



Source: Australian Federal Police Report, op. cit., p 4.

The Australian Connection

The activities of the Cult within Australia still remain unclear. Initially two members travelled to Australia in April 1993 to purchase a sheep station in Western Australia – the Banjawarn Sheep Station, located approximately 600 kilometres North West of Perth. In addition to the purchase of the sheep station, they also acquired exploration licences from the Western Australian Department of Mines. While in Australia they formed two companies, Mahaposya Australia Pty Ltd and Clarity Investments Pty Ltd, of which Asahara and an Australian citizen were listed as directors. On 9 September 1993, Asahara and 24 Cult members then travelled to Western Australia. It was this particular trip that caused Australian Customs staff to search and confiscate specific items in Cult members’ baggage when they arrived in Perth from Tokyo.¹⁴²

¹⁴² Australian Federal Police, op. cit., p 6.

Figure Two – The Banjawarn Sheep station the Aum Shinrikyo Cult based their activities in Australia from during the period April 1993 to October 1994. Throughout most of this period there were only caretakers present, however, the deaths of the sheep remain a mystery as estimates suggest they occurred following the main visit in September 1993.



Source: Australian Federal Police Report, op. cit., p 6.

The group had paid about AS\$30,000 in excess baggage charges which is what initially alerted customs officials. A search of the baggage found hydrochloric acid and perchloric acids disguised in bottles marked 'hand soap'. Two of the Cult members were subsequently charged with the carriage of dangerous goods on an aircraft, a fine of AS\$2400 each. The confiscated chemicals were re-ordered with one of the Cult members then flying to Melbourne to purchase two 25 gram bottles of thioacetamide. Eight days after the members of the Cult had entered Australia, they left again for Tokyo.¹⁴³

Ashara attempted to reapply for a visa to Australia again in October 1993, however, based on the pending actions of the Japanese authorities (which were still inconclusive regarding the Cult's CB activities), and the Cult's previous failure to disclose their activities in Australia, the visa was denied. Two members later entered Australia via Osaka and acted in the capacity of caretakers for the Banjawarn station. The Australian Federal Police report on the activities of the Cult suggests the station was to be utilised as a safe haven and that it was 'likely that Matsumoto intended to be in Australia during the time when the

¹⁴³ *ibid.*, p 7.

major attacks were to take place'.¹⁴⁴ This action was of course thwarted when he and his entourage were refused entry for their return visit.¹⁴⁵

Figure Three – Bones of sheep that were reportedly used as part of the testing regime utilised by the Aum. The forensic results of testing are inconclusive despite the association with the methylphosphonic acid residue. Reporting also indicated some of the sheep had signs of head trauma indicating they may have died from a blow to the head.



Source: Australian Federal Police Report, op. cit., p 7.

Cult activities at Banjawarn station, despite assertions by the Australian Federal Police report, remain unclear.¹⁴⁶ Similarly with the sampling conducted at facilities in Japan at Number 7 Satian and following the Masumoto attack, the degradation of by-products sampled was ambiguous.¹⁴⁷ The difficulty in the development of this argument is that reporting suggests that the Cult did not commence development of sarin until after October 1993, yet the main body of

¹⁴⁴ This seems unlikely given the nature of the Cult's didactic pronouncements of the apocalypse and the structuring of the Cult as the 'Japanese Government in waiting', particularly in what they foresaw for the Cult following the nuclear conflict between Japan and the United States. Additionally, the time line, (particularly in relation to the Masumoto and Tokyo subway attacks), the scope of the Cult's 'experimental' activities within Australia, and their work in Japan over this same period, appears to be at odds with the Australian Federal Police assessment that the Cult was involved in the use of sarin nerve agent at Banjawarn Station.

¹⁴⁵ Australian Federal Police, op. cit., p 7.

¹⁴⁶ Kaplan, op. cit., pp 126-134.

¹⁴⁷ Australian Federal Police, op. cit., pp 5-7. There is reference to sampling conducted by Dr Robyn Black on the degradation products remaining that suggest some ambiguity in the findings, however, the unequivocal conclusion in the report, of which there appears to be no contention, is that methylphosphonic acid (MPA) does not occur naturally.

the Cult had already visited Australia by then suggesting a discrepancy in the proposed critical path development of the sarin. There were further visits, yet the purpose of these is also unclear. Kaplan asserts that the two Cult members who later visited Australia and the sheep station were in fact there for the purposes of geological sampling (which was putatively aimed at examining the feasibility of uranium extraction by the Cult at Banjawarn station).¹⁴⁸ The nature of these later activities is inconclusive, particularly the possibility of any testing of the sarin – which also appears improbable. This is further complicated given the later assertions by the Federal Police on the nature of deaths of the sheep carcasses that were identified as part of the investigation of Bangawarn station. Kaplan argues that the testing at the station may have preceded the use of sarin during the Masumoto incident in June 1994 that eventually resulted in seven deaths. This particular assertion, however, remains uncorroborated as does even the use of sarin at the Banjawarn sheep station.¹⁴⁹

The Biological Program

The Aum's biological program, like much of their activities within Australia, remains uncertain despite assertions to the contrary. As with a great deal of the coverage of the Aum's activities, the biological program has been the subject of exaggerated claims and misinformed reporting. For example, the possible reporting of the use of biological agents by the Cult in nine incidents involving release before the Tokyo subway attack, now appears accepted as a certainty, when in fact there is little corroborating evidence for any of the incidents. There are assertions by members of the Cult that that biological work was conducted on a range of pathogens, including *Clostridium botulinum*, *Bacillus anthracis*, *Coxiella burnettii*, Ebola and developmental work in genetic engineering. The only claim by Cult members that appears to have some veracity relates to the Cult's developmental work on anthrax and a failed attempt to release the agent at

¹⁴⁸ Personal correspondence by D. E. Kaplan, (accessed 12 March 1999), <http://dotco.com/t3/Aum/Kaplan/kaplan3.txt>.

¹⁴⁹ For further detail on the developmental timeframes and assessments of various stages of activity, see Kaplan, op. cit., pp 126-134, and Australian Federal Police, op. cit., pp 4-7. Kaplan appears to have based much of his work on the Australian connection on material drawn from the Federal Police Report and other accounts from police reporting of activities at the station during the period 1993/1994.

the Japanese Royal wedding. Reporting of the dissemination system utilised for the attacks and its operation, however, lacks further corroboration and remains inconclusive, particularly in relation to the slurry used and the quantities involved.¹⁵⁰

Observations of the Tokyo Subway Attack

When examining the potential and utility of the agents against the Cult's objectives, in the case of the Matsumoto and Tokyo sarin attacks there are still issues which remain unclear.¹⁵¹ There is evidence and speculation that the attacks were designed to dissuade the Japanese authorities from investigating the Cult and that they were also meant to herald wider apocalyptic activities. Explanations by Cult members have shed little light (in fact, they have contributed to wider confusion on the issue) on exactly what Asahara's motives were. While there is no contention that the Cult perceived that it was threatened and both incidents were in some part designed to thwart further investigation and prosecution, the outcome was entirely counter productive to the group's objectives and interests given subsequent actions by the Japanese authorities. There are clear indicators of the Cult being involved in an escalatory level of activity prior to the incidents which involved the increasing use and preparedness to apply extremes of violence through extortion, assault, intimidation and murder. Most critically, the Cult adopted a very clear and emboldened attitude in relation to their purpose and intent. In doing so, they demonstrated a far greater willingness to take risks, perceiving they would be unaffected and consequently acted without any demonstrated moral constraint.¹⁵²

¹⁵⁰ Leitenberg attempts to provide some perspective to many of the now seemingly exaggerated claims made of the Cult's biological development activities. He suggests that the only pathogen they achieved some moderate success on was anthrax, with claims of Q fever, Botulinum Toxin and genetic engineering being derived from other secondary apocryphal and exaggerated reporting. Leitenberg, 'The Experience of the Japanese Aum Shinrikyo Group and Biological Agents', pp 159-172.

¹⁵¹ For a detailed account of the Tokyo subway attack and the events that precipitated the use of Sarin gas by the Cult, see Kaplan, *op. cit.*, pp 135-250.

¹⁵² This factor alone, which can be mistaken for recklessness, provides a strong indicator of changing dynamics within a group's value structure. The challenge is of course in placing these activities in a context and distinguishing further key indicators from the background clutter or simply increased collection processes, in the main, being facilitated through heightened police attention of the Cult's activities.

The effectiveness and efficiency of the attack using sarin was extremely limited when considered against the potential the Cult could have achieved with improved operational planning, technically proficient dissemination and better placement of the agent and weapon. Despite resources, expertise and materials available, the Cult still failed to effectively utilise and disseminate any of the chemical or biological agent it reportedly developed. Additionally, in earlier attacks utilising biological agents, if claims by the Cult are to be believed, they were completely ineffective in achieving any casualties or effective release of agent. While this could easily be attributed to a lack of technical and scientific acumen, the group's ability, or lack thereof to functionally and operationally develop, plan and execute an attack can be largely attributed to the dysfunctionality within the Cult's organisational structure. The lack of operational skills, the inability to functionally employ people and the complexity of the requirements ultimately resulted in the failure of the attack. The Cult's operational security waned as they became more brazen and prone to risk taking, potentially compromising their own activities. Additionally, the decision by the Cult to diversify into small arms production, procurement, remodification and arms sales of conventional military equipment impacted significantly in the diffusion of the organisation's technical capability and focus, consequently reducing the overall effectiveness, capacity and utility of the organisation.

Lessons for the Future

Despite sampling from the Matsumoto incident and a significantly increasing incidence of reporting to the police of activities at the Aum Satian 7 facility and the surrounding area of the Kamikuishshiki Village, the testing of waste samples (which indicated traces of diisopropyl methylphosphonate – most probably as a result of the production of sarin using the phosphorous trichloride route), no action was taken to further curb or investigate the Aum's activities or facilities. These and other related activities, often involving abductions, murder, reports of strange smells and a statement in the Japanese press by the Cult of apocalyptic and millenarian predications, still failed to compel the authorities to take action – yet how much different would it have been in today's environment, or indeed if the same circumstances had occurred in Australia?

One of the key failings by the authorities in recognising and interdicting activities involving the Aum's development, was the lack of any recognition or appreciation of what were critical indicators. Most notably in the range of indicators, were those related to the demonstrated proclivity towards the use of violence, the accumulation of wealth, targeted recruitment programs, a dialogue of apocalyptic and millenarian dogma, the procurement of WMD dual-use technological equipment/knowledge, and most importantly, a demonstrated willingness to utilise these capabilities. Despite the perception of tighter controls throughout most countries and the introduction of new laws and counter measures, the question remains as to whether history could be repeated. Is there the capacity within the current range of Australian domestic and international legislation that might stop or constrain CBR development and its use? And indeed, would an Australian legislative and regulatory environment provide the capacity and capability necessary to act against activities similar or even less overt than many of the Cult's, to curb micro-proliferation or development activity?

The unequivocal conclusion must be that the environment and circumstance that facilitated the Aum's CB capability escalation and eventual use still exists. While clearly the circumstances that were particular to the Aum's development were rather unique, the circumstances may not be all that different to the current regulatory environment and security processes applied within Australia. A lack of monitoring of industry and trade, little capacity for recognition of indicators and warnings, no uniform or harmonised national strategy, poor importation and domestic regulatory controls and limited supporting anti-terrorist and criminal legislation, all establish a landscape which provides for a significantly heightened exposure to risk and a limited capacity to apply effective counter-measures.

CONCLUSION

Far too many policy makers and researchers rendering assessments about terrorist use of unconventional weapons focus on what they imagine terrorists could do, not on what they have done in the past, which leads them to substitute their thinking for that of the terrorists. Acknowledging that history is not a perfect guide to the future and that government has a responsibility to take precautions against even unlikely eventualities, there must be some baseline, some historical context in order to consider eventualities.¹⁵³

In the development and understanding of risk, there exists an inherent danger in attempting to closely ascribe trends to past incidents, yet this must also be counter-balanced in providing for a perspective that can only be derived from the past. This is particularly relevant with non-state use, or a lack thereof, of WMD capabilities. There has been no effective use of CBR capabilities, as a WMD or otherwise. Incidents of use, other than reporting of interest or attempts at acquisition, which in themselves provide for a reflection of changing patterns in non-state activity, still support the potentially anachronistic deduction that non-state actors continue to subscribe to the use of ‘bombs and bullets’. While there is little contention over the wide availability and utility of conventional weapon systems, this provides no immutability in the assessment that non-state actors will not seek to develop CBR or WMD capabilities and use them. In fact this threshold has already been crossed, both in aspects of intent and the capability to develop CBR capabilities. So the key issue is as much about the determination through analyses of capacity and activities, as to when there will be a convergence of the two capabilities – CBR and WMD.

¹⁵³ J. Parachini, *Combating Terrorism: Assessing Threats. Risk Management and Establishing Priorities*, Testimony before the United States House Subcommittee on National Security, Veteran Affairs and International Relations, Washington DC, 26 July 2000, p 4.

The paradox in the complexity and paucity of reporting on CBR activities provides for only a limited capacity to further develop analysis on trends and patterns of non-state activity. Priorities are developing on the basis of established perceptions of vulnerability rather than credible analysis of the risk – the consequence being skewed and misinformed policy and the inefficient application of counter-measures.¹⁵⁴ Clearly, the long term sustainability in many of these resource and personnel intensive efforts is unsustainable. Accurate and balanced risk analysis, incorporating calibrated assessments of threat, capability and consequence, is a key baseline for the further development of any Australian national strategy.

A regular terrorism threat assessment will lessen the possibility that long term investment and program decisions are made according to the vicissitudes of raw intelligence and ensure that at least on a regular basis there is a community benchmark calibrating the threat.¹⁵⁵

The changed nature of terrorism is now more ephemeral and mercurial in its nature and scope than ever before. ‘There has been a shift in the meaning of terrorism from an individual phenomenon of sub-national violence to one of several elements, or part of a wider pattern, of non-state conflict’.¹⁵⁶ There are no longer the clear distinctions and boundaries between terrorism and criminal activities. The increased reliance on established transnational terrorist organisations to generate revenue through illegal crimes such as drug production, along with the increasing frequency of domestic reporting of CBR incidents, suggests that at a minimum, trends are changing, and in the worst case, organisations are more capable and may potentially utilise a CBR WMD

¹⁵⁴ Possibly the most valid philosophy highlighted in this increasing emphasis on consequence management and aspects of vulnerability was identified in the United States Gilmore Commission. The Commission identified, *inter alia*, the need for a number of strategies, but most saliently, a comprehensive understanding of aspects of threat (not the least of which was consensus on the threat) and the development of a uniform and effective risk process. United States Congress, *op. cit.*, pp 4-8.

¹⁵⁵ Parachini, ‘*Combating Terrorism: Assessing Threats. Risk Management and establishing Priorities*’, pp 2-6.

¹⁵⁶ Hoffman, *Inside Terrorism*, p 28.

capability at their discretion. This distinction alone indicates that strategies must have the capacity to incorporate the full spectrum of both non-state and criminal activities. It also reflects the need for capability to be considered as a function of intent, threat, and implicitly risk – which unless there is a standardisation and consensus on, fails to provide an effective context for any measures that may be adopted.

One of the more salient issues is in the establishment of a developmental baseline for CBR capabilities, that is, an understanding of both the organisational and psychosocial dynamics, as well as the operational capacity of the group to project a capability of any consequence. Critical to this distinction is the level of sponsorship, state and non-state, and thereby the potential for accelerated development of any capability. The dynamics of many of the enduring assessments of threat and timeframes for development within non-state organisations would be rendered irrelevant if core technical, scientific and engineering aspects of support from a state sponsor were to be provided. While there is always the potential for this to occur, deliberately or inadvertently, it is unlikely that a WMD capable state, with the prospect of international condemnation, sanctions and the strong likelihood of military action being directed against it, would lean towards the provision of CBR WMD services and materials. Rather, it would seek to protect and quarantine its own WMD capabilities from wider and more uncertain proliferation that may result from access to a non-state group.¹⁵⁷ The assumption is therefore, that without state assistance most non-state development of CBR capabilities would be, at least within the short term, at an inchoate stage. Critically, this suggests development would be more probably facilitated through micro-proliferation, theft, illegal acquisition or attempts to circumscribe extant micro-regulatory structures.

There are wide ranging perceptions on the preparedness of non-state groups to utilise a CBR WMD capability. Inductive analysis, however, should conclude that as the lethality of conventional attacks increases, it is likely this will also be reflected in aspects of unconventional capability use. Albeit, based on the

¹⁵⁷ Chalk, *Terrorism and Weapons of Mass Destruction Use: An Analysis of Potential Candidate Groups*, pp 23-26.

increasing frequency, the erosion of constraints and the wider usage than ever before of CBR capabilities, it appears that trends may not just shift slightly but may experience significant increases. Yet this increased frequency and wider availability may not necessarily reflect significant increases in capability and the capacity to effectively use the weapons, at least not in the short term. While the reporting of incidents does demonstrate that non-state actors are more likely to threaten the use of CBR agents for very discriminate purposes, such as poisoning and assassinations, there remains no clear causal relationship between the use of lower end spectrum agents, such as toxic industrial chemicals, and a propensity towards the use of high end spectrum agents. This aspect within the trends suggests that the adoption of micro-regulatory reform and increases in the capacity of controls may have a significant impact in influencing extant CBR capability development activities throughout the risk spectrum.

The assessment that terrorists are imitative rather than innovative and have a limited tactical repertoire directed against a similarly narrow target set, and indeed are hesitant to take advantage of new situations, let alone to create new opportunities, no longer stands scrutiny.¹⁵⁸ The disjuncture between the knowledgability gap in organisational capabilities, as evidenced in the 11 September 2001 attacks against the United States and the East Africa bombings in 1998, reaffirms how little is actually understood of these organisations. The diverse range and composition of groups under the umbrella of transnational terrorists, such as Bin Laden, affords those organisations the resources which are often well beyond the reach of those people directly loyal to him.¹⁵⁹ Reporting of the activities of his organisation's interest and putative intent to acquire a CBR WMD capability, is an indicator of the innovation and resources potentially available to these groups, which is on par or greater than with those of the Aum Shinrikyo Cult – however, more lethal.¹⁶⁰ The most significant lesson from the

¹⁵⁸ B. Jenkins, *International Terrorism: The Other World War*. RAND Corporation R-3302-AF), Santa Monica, 1985, p 12 as cited in Hoffman, *Inside Terrorism*, p 198.

¹⁵⁹ Office of Secretary of State, *Patterns of Global Terrorism*. p 52.

¹⁶⁰ Cameron, 'Multi-track Micro-proliferation: Lessons from Aum Shinrikyo and Al Qaida', pp 277-310, and Office of Secretary of State, *Patterns of Global Terrorism*, pp 17, 18, 52, 53.

tactics and targeting of non-state organisations is that more must be done to learn from these groups and in doing so, to effect more capable counter-measures.

State parties continue to struggle with the concept of preemption and deterrence of asymmetric threats. Despite key signatures of activities and indicators of a proclivity towards greater risk taking, growing fundamentalism and the use of extremes of violence, particularly throughout many transnational terrorist organisations, the increasingly complex challenge is in recognising activities and characteristics for what they actually are. Most particularly, there are those intrinsic values within the organisation that are key determinants of the moral threshold, drawn predominately from the group's ideology or value system, which ultimately establishes the level of risk. Extrinsic values, determined by the perception of the group, the value of the cause espoused or the threat, to the individual, the group or externally, will also greatly influence aspects of an organisation's proclivity towards the use of violence. 'The tension between the organisation's threat perceptions and the internal and external norms that govern its behaviour has a major bearing on how the organisation will develop and on the security strategies it will adopt'.¹⁶¹ It is not the opportunity or access to the technologies inherent within the capability that drives development and use, rather it is the values within the ideology and violence threshold that will indicate the disposition towards violence and the application of WMD capabilities. This theme exists throughout some religious extremist and right wing groups, yet recognising it is just one step. Adopting and implementing effective counter-measures to reduce the spectrum of risks from these groups, however, is the real challenge.

The diffuse and ephemeral nature of non-state activity vitiates the ability of security and intelligence agencies to detect potential terrorist activity or attacks and strongly suggests that national strategies and counter-measures must develop to accommodate changed technologies and operations. The development of the Aum Shinrikyo Cult as a transnational terrorist organisation, with extensive and legitimate acquisition, procurement and proliferation networks, signifies both the

¹⁶¹ J. P. Zanders, 'Assessing the Risk of Chemical and Biological Weapons Proliferation for Terrorists', *The Non-proliferation Review*, Washington DC, Fall 1999, p 17.

potential of these organisations and their ability to operate unfettered and under the pretence of legitimacy. Increased operational security, a greater capacity for risk taking and the adaptability to assimilate lessons from other terrorist groups, makes detection and interdiction difficult and the putative consequences from non-state action potentially more pervasive and catastrophic in scope.

The need to apply prescriptive models and establish clear trends and patterns is always difficult and based on the paucity and type of data available, the analysis more often tends to be wrong. The tendency to assign a particular cause to an outcome where in fact there may be none, other than the laws of probability, too often is the determinant for assessment. Bernstein, in his book on risk, cites an example of the Nobel Laureate, Kenneth Arrow, who was given the difficult task of forecasting the weather in the Air Force during the Second World War. The anecdote illustrates the uncertainty and reliance of the human psyche on predictive modelling and data, yet this is despite its often limited utility.

Some officers had been assigned the tasks of forecasting the weather a month ahead, but Arrow and his statisticians found that their long-range forecasts were no better than numbers pulled out of a hat. The forecasters agreed and asked their superiors to be relieved of this duty. The reply was “The Commanding General is well aware that the forecasts are no good, however, he needs them for planning purposes”.¹⁶²

¹⁶² Bernstein, *op. cit.*, p 203.