

## Framework for Analyzing the Future Threat of WMD Terrorism

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### **Abstract**

This article examines theories of practical and strategic constraints that collectively explain why so few terrorist groups in history have crossed (or attempted to cross) the WMD threshold. From this analysis, it becomes clear that a terrorist group's deliberations about WMD can be influenced (positively or negatively) by a variety of factors. Our projections of the future WMD terrorism threat must therefore account for changes in the kinds of practical and strategic constraints that could lead to an increased willingness and/or capability of a group to pursue these kinds of weapons. Further, there are ways in which governments can influence a terrorist group's decision-making and thus have a direct impact on the future evolution of the WMD terrorism threat.

# Framework for Analyzing the Future Threat of WMD Terrorism

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## Abstract

This article examines theories of practical and strategic constraints that collectively explain why so few terrorist groups in history have crossed (or attempted to cross) the WMD threshold. From this analysis, it becomes clear that a terrorist group's deliberations about WMD can be influenced (positively or negatively) by a variety of factors. Our projections of the future WMD terrorism threat must therefore account for changes in the kinds of practical and strategic constraints that could lead to an increased willingness and/or capability of a group to pursue these kinds of weapons. Further, there are ways in which governments can influence a terrorist group's decision-making and thus have a direct impact on the future evolution of the WMD terrorism threat.

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## Introduction

According to dozens of high profile books and reports published in recent years, we are virtually certain to see a terrorist attack using a weapon of mass destruction (WMD) at some point in our lifetime.<sup>1</sup> Some observers have argued that the primary objective of terrorist groups is to kill as many people as they possibly can, and thus we should expect them to pursue and use WMD. However, this line of reasoning is ill-informed; there is much more to terrorism than simply intent to kill. Meanwhile, others have suggested that trends among weak states and the globalization of crime and terrorist networks are combining to yield a higher probability of WMD terrorism (dubbed "threat convergence" by some).<sup>2</sup> Essentially,

the suggestion is made that increased access to WMD materials will lead to more WMD terrorist attacks, taking for granted that terrorist groups intend to acquire and use them.

However, of the hundreds of terrorist groups that have existed over the past century, only a handful have used (or tried to use) any kind of WMD. Furthermore, we know of only a small number of terrorist groups in existence today that have publicly declared an interest in acquiring and using WMD. What accounts for this noticeable contrast between dire predictions of the threat and the historical record on WMD terrorism? Indeed, why have so few terrorist groups overall shown an interest in WMD? After a brief historical review of terrorist-related WMD events, this article will explore two categories of theoretical constraints (practical and strategic) that collectively help explain why so few terrorist groups have crossed the WMD threshold. The analysis will then conclude with implications for further research and policy development.

## WMD Terrorist Attacks and Plots: Historical Examples

As noted above, there are only a small handful of terrorist attacks or plots to date involving some form of WMD, and most of these are quite familiar to students and scholars in the terrorism studies field.<sup>3</sup> For example:

- In the autumn of 1984, a cult led by the Bhagwan Shri Rajneesh used *Salmonella Typhimurium*—a bacterium that normally causes non-fatal food poisoning—to contaminate several restaurant salad bars in a plot to influence a local election in Oregon.<sup>4</sup>
- In 1985, a small survivalist group in the Ozark Mountains of Arkansas known as the Covenant, the Sword, and the Arm of the Lord acquired approximately 30 gallons of potassium cyanide, with the intention of poisoning water supplies in New York, Chicago, and Washington, D.C.<sup>5</sup>
- In June 1990, the Liberation Tigers of Tamil Eelam (LTTE) used chlorine gas in an assault on a Sri Lankan Armed Forces camp at East Kiran, injuring 60 soldiers.<sup>6</sup>
- In March 1995, Aum Shinrikyo—a Japanese religious cult—launched an attack on the Tokyo subway using sarin gas, killing nearly a dozen people and injuring thousands more.<sup>7</sup>

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- Later that year, Chechen rebels planted—but did not detonate—a radiological dispersion device (RDD, also known as a "dirty bomb") consisting of dynamite and cesium 137 in a pedestrian park in Moscow.
- In October 2001, an unknown assailant mailed letters in the U.S. stuffed with weaponized anthrax, killing five and sickening dozens more.<sup>8</sup>
- In January 2003, British police raided an apartment in north London and found recipes and instructions in Arabic for making ricin as well as other toxins, along with tools which appeared to contain chemical residue, castor beans (the raw ingredient needed to produce ricin), cherry and apple seeds (which are used in the production of cyanide), and a CD-ROM containing instructions for making homemade explosives.<sup>9</sup>
- In January 2004, U.S. military forces discovered seven pounds of cyanide salt during a raid on a Baghdad house that was reportedly connected with al Qaida, and in November of that year they discovered a "chemical laboratory" in Fallujah containing potassium cyanide, hydrochloric acid, and sulfuric acid among other deadly materials.<sup>10</sup>
- In April 2004, Jordanian authorities announced that they had broken up an al Qaida plot to use large quantities of toxic chemicals—including sulfuric acid, cyanide and insecticides—in attacks against the U.S. Embassy, the Jordanian prime minister's office, and the headquarters of Jordanian intelligence.<sup>11</sup>
- In late 2005, a manual for the production of *al-Mubtakkar*, a crude hydrogen cyanide dispersal device, began appearing on numerous al-Qaida websites and forums, though to date no such device has been discovered by authorities.<sup>12</sup>
- In November 2006, an alleged al-Qaida operative known as Dhiren Barot was convicted in the UK of planning to use a radiological weapon in a series of attacks on both public gathering places and key economic targets in both Britain and the U.S.<sup>13</sup>
- And in December 2008, authorities in the small town of Belfast, Maine discovered a "dirty bomb" plot involving a well-funded right-wing extremist named James Cummings.<sup>14</sup>

In sum, while there is an extensive history of terrorist attacks over the past 50 years, only a fraction of them have involved any kind of chemical, biological, radiological or nuclear (CBRN) materials. Furthermore, as John Parachini observed, even the rare incidents that involved the use of

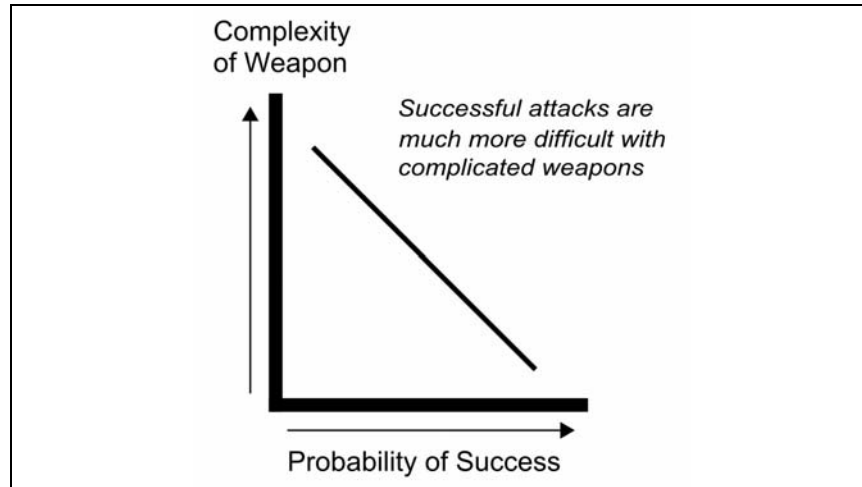
these kinds of weapons hardly threatened mass destruction.<sup>15</sup> Scholars of terrorism and security studies have offered various reasons for the relative scarcity of WMD terrorist attacks, which generally fall within one of two categories: practical constraint theories, and strategic constraint theories. Each of these categories has its merits; however, as described later in this essay, viewing them collectively enlightens our understanding as to why so few terrorist groups have ventured down the WMD path.

## Practical Constraint Theories

The first category of theories basically argues that a terrorist group's capabilities are significantly constrained by a number of factors, and these constraints impact their views and decisions about CBRN weapons. There are generally two kinds of practical considerations: technical and environmental.

### *Technical Constraints*

Theories of technical constraints are drawn from the complex nature of the weapons; essentially, CBRN weapons are complicated and difficult to build, transport, and successfully deploy against a specified target. These complications, in turn, diminish the terrorist group's likelihood of successfully carrying out their attack. In other words, as Figure 1 illustrates, more complicated terrorist plots have lower chances of success, and this influences a terrorist group's choices about the type of weapons they would use in their attacks. Furthermore, increased technological complexity of a weapon usually increases its financial costs, another key consideration for terrorist groups.

**Figure 1:** Constraints of Technical Complexity

Source: Author

When a terrorist group devotes its time, money and resources toward an attack, they will naturally want to maximize the likelihood of their operation's success. However, terrorist groups are limited by what their members are capable of accomplishing. For instance, most terrorist groups have encountered significant difficulty attracting competent bio-chemists, physicists, radiological technicians or nuclear engineers capable of developing these types of weapons. Properly handling and storing hazardous chemicals, biological pathogens, or radioactive materials is also dangerous and requires sophisticated knowledge and skill. At the most extreme end of the CBRN spectrum, there are no current terrorist groups with the kind of advanced technical expertise needed to build and deploy a nuclear weapon. As noted below, it is instructive that the historical record contains only one group (Aum Shinrikyo) that had the means, capabilities, intentions and finances to develop and deploy a sophisticated weapon of mass destruction. And even for them, a nuclear weapon was far beyond their reach.

If an extremist group does manage to overcome the significant technical challenges attributed to building a viable CBRN weapon, the group may still be unable to test the weapon in order to determine its effectiveness. Again, this raises a level of uncertainty into operational planners concerned with minimizing the possibility that their attack will fail. In a sense, terrorist groups are somewhat risk-averse; their fear of failure can be a constraining factor in their decision-making. Another factor constraining these groups involves the various challenges of delivering a

CBRN weapon to its target safely and effectively. For example, many of these types of weapons are relatively fragile and can expose the group's members to enormous risks when transporting the device. Overall, there are many kinds of technical challenges associated with CBRN weapons. These challenges, in turn, influence a terrorist group's decision-making about whether to invest resources in trying to develop or acquire them for use.

### *Environmental Constraints*

Other kinds of practical considerations are a product of the terrorist group's operating environment. From this aspect, theorists argue that a WMD attack is difficult as there are limited numbers of sources for CBRN weapons. Those who possess them, more importantly, are reluctant to share them with anyone else, let alone terrorists. Furthermore, the materials and technology necessary to develop CBRN weapons are difficult to acquire, and often prohibitively expensive. Interestingly, the financial aspects are sometimes overlooked by analysts, but apart from some industrial chemicals that are relatively ubiquitous and cheap, procuring the materials needed for most kinds of WMD can be expensive.

CBRN materials and technologies are also difficult to steal or purchase, as the international community over the past two decades has placed an emphasis on monitoring and restricting the commercial sale and transportation of these materials and technologies, particularly across borders. For instance, new sensor technologies have decreased a group's ability to transport CBRN materials (and weapons) from one location to another, particularly across borders. Furthermore, if a WMD terror attack occurred somewhere in the world tomorrow, it is highly likely that the international community would respond with even greater restrictions on access and movement of these types of materials and technologies. Conversely, a foreign terrorist group may attempt to acquire CBRN materials within their target country, in order to assemble the weapon within that country and avoid the border control challenges. However, this approach would bring a number of different logistical and tactical challenges related to operating in an unfamiliar environment, again raising levels of uncertainty about the potential success of an attack plan.

Local conditions within a particular country are particularly important in regards to a terrorist group's access to CBRN materials and technologies required for a WMD effort. For example, Aum Shinrikyo—the only group known to have developed its own advanced chemical weapons program—was allowed by Japanese government and society to hide behind a shroud of religious protections and a seemingly legitimate industrial chemical



business. Key lessons from that attack have been learned, and thus we are unlikely to ever see that combination of extremist ideologies and technical capabilities again.

Of course, the severity of these practical constraints—both technical and environmental—differs according to the specific type of CBRN weapon. For instance, the odds would be more favorable for a terrorist group somewhere to acquire or develop at least a rudimentary chemical weapon using commonly available industrial chemicals like phosgene, chlorine, hydrogen cyanide, or concentrated pesticides. Even some ordinary household chemicals could feasibly be used to construct low-grade but effective chemical weapons.

From this perspective, it is worrisome that within the past few decades we have seen a global proliferation of private firms developing and profiting from various kinds of CBRN materials and technologies. Still, as noted earlier, there have been only a handful of terrorist incidents involving CBRN weapons *of any kind* over the past half century. In other words, even the increasing availability of potential WMD components—essentially, reducing the practical constraints—has not contributed meaningfully toward a rise in WMD terrorist attacks or plots. Thus, other types of constraints must also be influencing a terrorist group's deliberations about these kinds of weapons.

## Strategic Constraint Theories

The second category of constraint theories argues that terrorist groups are largely strategic and rational, and therefore their deliberations about CBRN weapons involve various strategic calculations, like cost benefit analyses. For example, a terrorist group's leaders may ask themselves, "Will a CBRN weapon help us achieve our objectives faster or more effectively than other means? Will the possession or use of such a weapon bring us a considerable amount of prestige and/or power to intimidate our enemies?" For most terrorist groups, their strategic deliberations have steered them away from CBRN weapons. In fact, many scholars have observed that there are very few strategic benefits a terrorist group could derive from using a CBRN weapon, particularly compared to other, more conventional kinds of weapons. Furthermore, even if a group believes there may be some strategic benefit from a CBRN weapon, the practical constraint theories described earlier would still weigh heavily on their decision whether to actually pursue developing or acquiring such weapons.

The terrorist group would additionally need to consider whether a WMD attack would be counterproductive by generating, for example, condemnation among the group's potential supporters. This possible erosion in support, in turn, would degrade the group's political legitimacy among its constituencies, who are viewed as critical to the group's long-term survival. By crossing this WMD threshold, the group could feasibly undermine its popular support, encouraging a perception of the group as deranged mass murderers, rather than righteous vanguards of a movement or warriors fighting for a legitimate cause.<sup>16</sup> The importance of perception and popular support—or at least tolerance—gives a group reason to think twice before crossing the threshold of catastrophic terrorism. A negative perception can impact a broad range of critical necessities, including finances, safe haven, transportation logistics, and recruitment. Many terrorist groups throughout history have had to learn this lesson the hard way; the terrorist groups we worry about most today have learned from the failures and mistakes of the past, and take these into consideration in their strategic deliberations.

Furthermore, a WMD attack could prove counterproductive by provoking a government (or possibly multiple governments) to significantly expand their efforts to destroy the terrorist group. Following a WMD attack in a democracy, there would surely be a great deal of domestic pressure on elected leaders to respond quickly and with a massive show of force. A recognition of this reality is surely a constraining factor on Hezbollah deliberations about attacking Israel, or the Chechen's deliberations about attacking Russia, with such a weapon.

A group's strategic thinking about WMD is also shaped by the nature of its ideology. For example, the Marxist ideology of the Revolutionary Armed Forces of Colombia (FARC) or the Sendero Luminoso (Shining Path) in Peru articulates a future in which they will someday be in charge of a particular governable space. This strategic vision requires them to overthrow an existing government while ensuring that the space and people they seek to influence and govern are left relatively undamaged. From this perspective, many types of CBRN weapons would not be useful in achieving this political objective. In contrast, ideologies that articulate a clear dividing line between "us" and "them" allow members of a terrorist group and its supporters to view all of "them" (or the "others") as legitimate targets.<sup>17</sup> This, in turn, may expand the range of weapons the group considers useful.

Victor Asal and Karl Rethemeyer highlight this point in their research on terrorist group lethality, using the term "othering" to describe a "process of clearly articulating groups and individuals that have a lesser moral or

ethical status than members of the terrorist organization and the racial, ethnic, geographic, or language group they purport to represent."<sup>18</sup> They find this "othering" to be most pronounced among religious groups. In fact, Bruce Hoffman notes that religion "functions as a legitimizing force, specifically sanctioning wide-scale violence against an almost open-ended category of opponents."<sup>19</sup> From this perspective, it is noteworthy that two of the groups that crossed the WMD threshold were religious cults (Aum Shinrikyo and the Rajneeshes), as each seemed unconstrained by earthly considerations. In truth, however, their uses of CBRN weapons were for very local, practical objectives, rather than in the service of a higher power. While the Rajneeshes were attempting to influence a local election, the attack by Aum Shinrikyo against the Tokyo subway was intended to distract authorities and delay an ongoing investigation into activities of the group's leader Shoko Asahara.

Asal and Rethemeyer also found that in addition to religious groups, ethno-nationalists have a strong "othering" component in their ideologies, noting that groups in this category "can be just as indiscriminately violent as organizations motivated by religious fervor."<sup>20</sup> This raises the question whether ethno-nationalists may have a stronger inclination for CBRN weapons than other groups. Indeed, as noted earlier, at least two groups implicated in WMD attacks or plots in recent years were ethno-nationalist in ideological orientation. If the perceived enemies of a terrorist group (like Sinhalese or Russians) are separated by physical geography from the aggrieved population represented by the terrorist group (like Tamils or Chechens), perhaps there are fewer strategic constraints when considering a catastrophic terror attack against the governing regime (in Sri Lanka or Russia) and those who support it. This line of reasoning suggests that Chechens may someday consider deploying a CBRN weapon against Moscow or some other densely populated city in Russia, if they felt that doing so would force the government to acquiesce to Chechen demands for an independent homeland. However, as noted earlier, it is also likely that any attack of this type would result in a massive use of force against Chechens, thus a WMD attack would prove counterproductive.

From an analytical perspective, a key question is whether "othering" provides a uniquely salient justification for certain groups—like religious and ethno-national—to have more interest in CBRN weapons. In theory, this dimension of "othering" might also help explain the motivations behind James Cummings' ill-fated attempt to build a dirty bomb and detonate it in Washington, D.C.<sup>21</sup> In this case, Cummings' hatred of an "other" ethnicity, fueled by racial insecurities, compelled him to pursue a CBRN weapon, although it is clear that using high explosives could have

achieved the same intended results. Overall, however, we have not seen enough of a significant prevalence of WMD interests among religious, ethno-nationalist or any category of terrorist group to indicate a significant link between "othering" and decision-making with regard to WMD.

Finally, as with the practical constraint theories, the application of strategic constraint theories to our threat analyses must differ according to the attributes of each specific type of weapon. For instance, some weapons—like a small-scale chemical or radiological bomb—would be dramatic but would likely yield few casualties and would impact a relatively small, contained geographic area. In contrast, a contagious pathogen used in a bioterror attack could lead to a wide variety of scenarios, some of which include massive casualties and a potentially regional or even global impact. The political ideologies of most terrorist groups would suggest that the former, rather than the latter, is a more likely kind of CBRN weapon to anticipate at some point in our future. Meanwhile, some observers have suggested that the most devastating kinds of WMD attack would likely be carried out by an apocalyptic cult, whose strategic objectives require the death of as many people as possible. Overall, the important point to make here is that we should not consider strategic constraints to be universal across the entire CBRN spectrum.

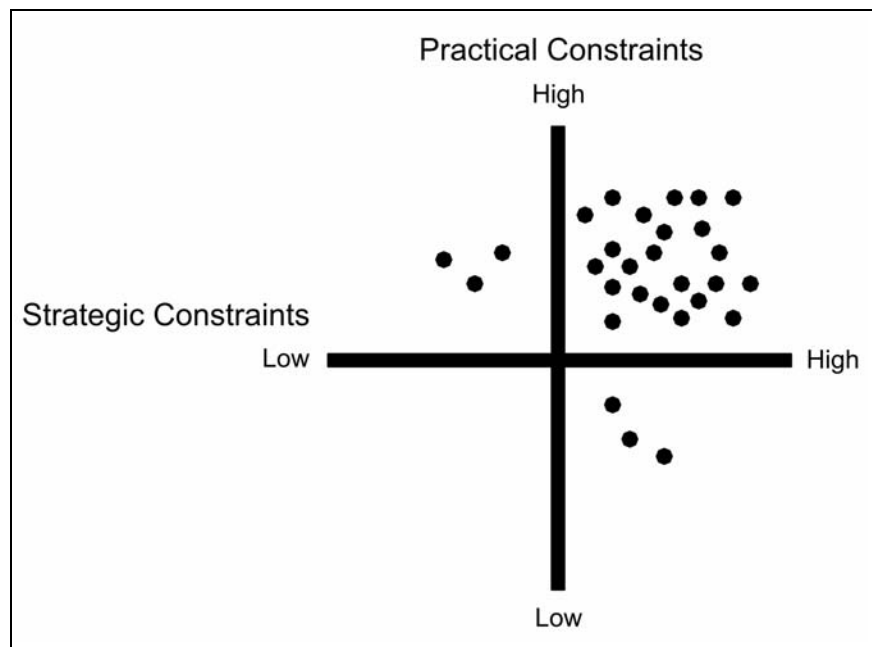
In summary, the collection of strategic constraint theories indicates that a terrorist group is more likely to believe that its goals and objectives can be achieved through the use of conventional explosives and other kinds of non-WMD attacks—the perceived 'value added' of a WMD is viewed as just not worth the investment of time, effort, or risks. From this perspective, it stands to reason that governments can influence a terrorist group's strategic deliberations about CBRN weapons in ways that can enhance global security, as described below.

## Implications for Research and Policy on WMD Terrorism

The application of the theories described above requires a case-by-case analysis of each terrorist group. For some groups, the strategic constraints for CBRN weapons are low—this includes al-Qaida, which has publicly declared an interest in acquiring and using CBRN weapons. However, the available information indicates that practical constraints remain a significant obstacle to overcome for virtually all terrorist groups. Some groups may have significant technical and global capabilities, but thus far have not expressed an interest in CBRN weapons, suggesting that perhaps strategic constraints have kept them from crossing the WMD

threshold. Analyzing these together reveals a collection of logical reasons for why most terrorist groups have not crossed the WMD threshold. Furthermore, when looking at the available information and attributes of the terrorist groups that are of most concern to the National Counterterrorism Center (NCTC)—many of which are on the U.S. Department of State's list of Foreign Terrorist Organizations—we find that a majority of groups are clustered in the "high practical constraints/high strategic constraints" quadrant of Figure 2. Accordingly, there are very few groups in either the "low practical constraints" (e.g., a well-funded and equipped group like Hizballah) or "low strategic constraints" (e.g., apocalyptic cults). The most concerning kinds of groups, in terms of WMD threat analysis, are those that we would place in the "low strategic constraints/low practical constraints" quadrant. Fortunately, as noted earlier, available information suggests there are no current terrorist groups with comparatively low practical and strategic constraints with regard to WMD.

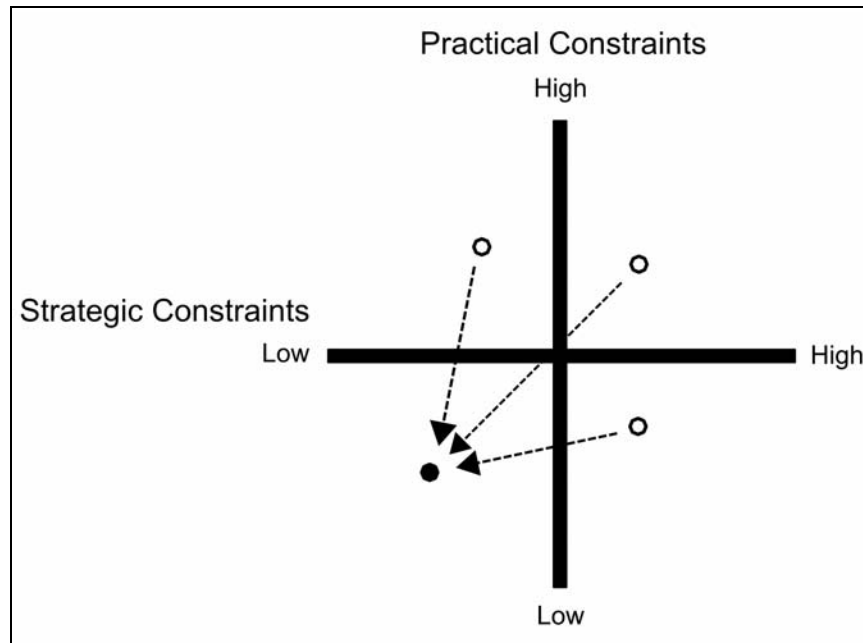
**Figure 2:** A combination of factors influence a group's decision-making, and places most terrorist groups in the High Strategic Constraints/High Practical Constraints category



Source: Author

Of course, Figure 2 reflects only a brief snapshot based on current information about those terrorist groups, while proper threat analysis must take into account a temporal dimension as well, as national security threats change and evolve over time. Thus, to deepen our understanding of how to project the future WMD terrorist threat, there are a variety of questions to consider for both research and policy. For example, how and why could these constraining factors diminish for a particular group? In other words, under what conditions might a group change from the upper-right quadrant to the lower-left quadrant (see Figure 3), indicating an increased likelihood of that group pursuing and using a CBRN weapon? In essence, a reduction in practical and/or strategic constraints is assumed to have some kind of impact on a group's deliberations about WMD.

**Figure 3:** Hypothetically, diminished Practical and/or Strategic Constraints could lead to an increased WMD threat from a particular terrorist group



Source: Author

Some things that might impact practical constraints include regular scientific breakthroughs, potentially reducing the technological challenges of CBRN weapons. Are we making WMD easier to develop? Similarly, what is the impact of the global increase in biotechnology labs, or in the industrial uses of radioisotopes and new kinds of chemicals? Are we making potential WMD materials easier to acquire? A constant worry is that a terrorist group with a resonating ideology could succeed in recruiting sophisticated experts in biotechnology, chemistry, or other sciences—similar to Aum Shinrikyo's actions during the 1990s. Guarding against radicalization among members of the scientific community should be a critical dimension of any counterterrorism strategy. Also, as noted earlier in this discussion, the intersecting relationships of global criminal networks and terrorism could lead to a more facilitating environment for a WMD terrorist attack.

Over the past decade, the international community has focused considerable resources on exacerbating practical constraints, making it harder for terrorist groups to acquire CBRN materials and technologies. Combating the proliferation of nuclear materials and technologies—through intelligence, interdiction and international cooperation—has been a particularly prominent goal of the Obama administration's foreign policy agenda. As Graham Allison has poignantly observed, the premise of these efforts is that if there are no nuclear materials, there can be no nuclear terrorism.<sup>22</sup> Of course, as noted earlier, there are rudimentary low-impact chemical weapons that can be fashioned out of ordinary household items, however, much has been done to constrain access to the kind of big-impact CBRN weapons featured in the more prominent public debates and Hollywood movies.

An underlying question at this point is, would decreased barriers to acquire or build a CBRN weapons lead to stronger interest or increased efforts to do so? In other words, if CBRN weapons (or materials to make them) were easier to make or obtain, would more groups have and use them? Or would strategic constraints supersede here, meaning that the group would still not pursue WMD *even if these weapons became easier to acquire or develop*, because of limited perceived benefit, and potential counterproductive impact? Perhaps most importantly, why (and in what ways) might we see a group change its views toward CBRN weapons in the future?

Projecting the impact of changes in strategic constraints is obviously more complicated. There are many foreseeable events or situations in which a terrorist group may feel less constrained by the strategic and ideological considerations described above. For instance, if a terrorist

group's primary state sponsor were the target of a WMD attack, would that terrorist group then use WMD in a retribution-style attack? Similarly, if a government used CBRN weapons against a group (or its constituents), would the targeted group feel compelled to respond in kind, regardless of the costs? In other words, if Iran were to use chemical munitions against the People's Mujahedin of Iran (MeK) or Jundullah, or Syria deployed chemical weapons against rebels (like Saddam Hussein's attacks against Kurdish villages during the 1980s), would it mobilize thousands of sympathizers to embrace terrorism, including some who commit themselves to acquiring and using WMD against Syrian government forces or civilian targets? Would a group turn to a CBRN weapon in an act of desperation or last resort? For example, would a sense of growing irrelevance and a need to recapture center stage (or risk losing influence forever) drive a member or affiliate group of al-Qaida to cross the WMD threshold?

These and other questions address an important—and often under-appreciated—issue about changes in the strategic calculations a group would make about WMD terrorism. Under what conditions could CBRN weapons become widely supported by a group's constituencies? If a government comes to power in a democracy but is seen as weak, could this offer a new strategic benefit to a terrorist group that demonstrates a capability to deploy CBRN weapons, threatens to use such weapons, and then forces a negotiated settlement to whatever conflict animates their violence? What about peer pressure—if a group (particularly one considered a peer competitor) crosses the WMD threshold, would it incentivize others to follow (an adaptation of Mia Bloom's "outbidding" thesis with regard to suicide bombings)?<sup>23</sup> One group's ability to develop and use CBRN weapons may not change the inherent nature of WMD terrorism—particularly the risks, financing and level of technical sophistication necessary—but this could forge a path that other groups would eventually follow.

While research is still needed on the ways in which situations and events could elevate the threat of WMD terrorism, we must also focus our efforts on understanding what the international community can do to exacerbate the practical and strategic constraints in ways that can lower the chances of a WMD terror attack in the future. Hence, are we making the environment harder for the terrorists now than it has been before? Beyond the realm of practical constraints, are we influencing the strategic deliberations of terrorist groups and can we do so more effectively? For example, surely Hezbollah's leaders know without a doubt that openly declaring an



interest in CBRN weapons, or even the mere possession of precursor materials for such weapons, would likely bring considerable negative attention from neighboring countries in the Middle East, especially Israel.

One assumption that is made in this policy arena is that a posture of certain and forceful retaliation can be a way of convincing a group that a WMD would most definitely not be in their best self-interests. For example, as noted earlier, Chechen groups may be constrained from using CBRN weapons in attacks against Moscow because of the likelihood that such attacks would produce heavy-handed Russian military reprisals. When studying the history of terrorism, we find that groups and their leaders have been influenced by a core instinct for survival; there are very few instances where a terrorist group intentionally set out to do something knowing that their success in the operation would lead directly to their own demise. Furthermore, the more established the terrorist group is, and the more entrenched its leaders are, the more the group has to lose. This aspect, in turn, also influences caution in their strategic deliberations about the usefulness of CBRN weapons.

One obvious comparison here is in the case of the 9/11 attacks in New York and Washington, D.C. While CBRN weapons were not involved, the effects of those attacks are considered by many to be equal in scale of death and destruction to what we envision from a WMD terrorist attack. A significant body of research has emerged since those attacks, which suggests that the leaders of al-Qaida made several strategic miscalculations. For example, Max Abrahms and Karolina Lula offer compelling empirical and theoretical evidence that Usama bin Ladin "overestimated the likelihood that 9/11 would coerce American concessions."<sup>24</sup> Instead, the terrorist network lost its safe haven in Afghanistan, its Taliban allies were driven from power, and many senior leaders of both al-Qaida and the Taliban have been killed or captured. One could easily make the argument that the situation and future prognosis for both al-Qaida and the Taliban would be much different had the 9/11 attacks not occurred. This should prove instructive for terrorist groups considering whether a CBRN attack would be of sufficient strategic benefit.

Finally, governments must be prudent and responsible with regard to preparing their citizens to deal effectively with a WMD terrorist attack. If such an attack produces mass panic, draconian security measures or other forms of over-reaction from the government, this could support the ideological narrative of the terrorist group, thus incentivizing future WMD terrorist attacks. If we accept the premise that there are some things that could increase the WMD terror threat in the future, what are we doing now to prepare an appropriate response?

In summary, there are many research questions that can enhance our analysis of the future WMD threat. The underlying focus of this research should be to gain a clear understanding of what could increase (or diminish) the practical and/or strategic constraints that terrorist groups face regarding CBRN weapons. That understanding, in turn, should guide policies and strategies for combating the threat of WMD terrorism. By combining theories and empirical evidence, we can provide a more accurate portrayal of this threat and how to respond most effectively.

## Conclusion

This analysis indicates there is a need for new research that incorporates empirical evidence and new theories on how events and contextual situations can impact a terrorist group's deliberations about WMD. For example, what data or evidence is available that can tell us how one WMD attack might impact the strategic calculations and deliberations of other groups in the future? Hence, projecting the future WMD threat must consider whether the theories of practical and strategic constraints described here will hold constant or change according to events and situational conditions. Only then can we find an appropriate balance between underestimating the threat and promoting mass hysteria. Meanwhile, the objective of governments, and the international community in general, should be to increase all kinds of constraints, eventually making the practical and strategic challenges insurmountable for any terrorist group to cross the WMD threshold in the future.

## About the Author

James J.F. Forest, Ph.D. is Associate Professor and Director of the Center for Security Research and Technologies at the University of Massachusetts Lowell. He also serves as a Senior Fellow at the Joint Special Operations University. Dr. Forest has published 16 books and dozens of articles on terrorism, counterterrorism, WMD and homeland security, and served nine years (2001–2010) on the faculty at the U.S. Military Academy, six of those years as Director of Terrorism Studies in the Combating Terrorism Center at West Point. Contact info: [james\\_forest@uml.edu](mailto:james_forest@uml.edu).

## References

- 1 For the purposes of this essay, the term WMD refers to the kinds of chemical, biological, radiological and nuclear CBRN weapons that most researchers and government agencies have described in recent publications. Later in this discussion, CBRN weapons is used interchangeably with WMD.
- 2 Joshua Sinai and James J.F. Forest, "Threat Convergence: A Framework for Analyzing the Potential for WMD Terrorism," in James J.F. Forest and Russell D. Howard (eds.), *Weapons of Mass Destruction and Terrorism* (2nd edition) (New York: McGraw-Hill, 2012), 725–738.
- 3 James J.F. Forest, "Opportunities and Limitations for WMD Terrorism," in James J.F. Forest and Russell D. Howard (eds.), *Weapons of Mass Destruction and Terrorism* (2nd Edition) (New York: McGraw-Hill, 2012), 55–72.
- 4 "Rajneeshees in Oregon: The Untold Story," OregonLive.com, available at: <http://www.oregonlive.com/rajneesh/>.
- 5 See the Nuclear Threat Initiative's description of this account: Jessica Stern, "The Covenant, the Sword, and the Arm of the Lord," in Jonathan Tucker (ed.), *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons* (Cambridge, MA: Harvard University, 2011).
- 6 Bruce Hoffman, "CBRN Terrorism Post-9/11," in James J.F. Forest and Russell D. Howard (eds.), *Weapons of Mass Destruction and Terrorism* (2nd Edition) (New York: McGraw-Hill, 2012), 39–54; Hoffman, Bruce, *Inside Terrorism* (New York: Columbia University Press, 1998), 361.
- 7 John Parachini, "The Making of Aum Shinrikyo's Chemical Weapons Program," in James J.F. Forest (ed.), *The Making of a Terrorist: Recruitment, Training, and Root Causes* (Vol. 2) (Westport, CT: Praeger Security International, 2006); Robyn Pangi, "Consequence Management in the 1995 Sarin Attacks on the Japanese Subway System," in James J.F. Forest and Russell D. Howard (eds.), *Weapons of Mass Destruction and Terrorism* (New York: McGraw-Hill, 2012), 657–685; "Chronology of Aum Shinrikyo's CBW Activities" (bibliography, Monterey Institute of International Studies, 2001), available at: [http://cns.miis.edu/reports/pdfs/aum\\_chrn.pdf](http://cns.miis.edu/reports/pdfs/aum_chrn.pdf).
- 8 Authorities believe that Bruce Ivins, a microbiologist at the U.S. Army Medical Research Institute for Infectious Diseases, was responsible for the attacks. For complete details, please see FBI, "Amerithrax or Anthrax Investigation," *Federal Bureau of Investigation*, available at: <http://www.fbi.gov/about-us/history/famous-cases/anthrax-amerithrax>.
- 9 Hoffman, "CBRN Terrorism Post-9/11;" "Killer jailed over poison plot," *BBC News*, April 13, 2005, available at: [http://news.bbc.co.uk/2/hi/uk\\_news/4433709.stm](http://news.bbc.co.uk/2/hi/uk_news/4433709.stm).
- 10 "Weapons cache biggest yet," *Washington Times*, November 25, 2004, available at: <http://tinyurl.com/cddap4g> ([www.washingtontimes.com/news/2004/nov/25/20041125-102445-4112r/](http://www.washingtontimes.com/news/2004/nov/25/20041125-102445-4112r/)).
- 11 Rene Pita, "Al-Qa'ida and the Chemical Threat," *The ASA Newsletter* 05–3: 108 (2005), available at: <http://www.asanltr.com/newsletter/05-3/articles/053a.htm>.

- 12 Sammy Salama, "Special Report: Manual for Producing Chemical Weapon to Be Used in New York Subway Plot Available on Al-Qaeda Websites Since Late 2005," *James Martin Center for Nonproliferation Studies*, July 20, 2006, available at: [http://cns.miis.edu/other/salama\\_060720.htm](http://cns.miis.edu/other/salama_060720.htm). Also, see Ron Suskind, "The Untold Story of al-Qaeda's Plot to Attack the Subway," *Time*, June 19, 2006, available at: <http://www.time.com/time/magazine/article/0,9171,1205478,00.html>.
- 13 Hoffman, "CBRN Terrorism Post-9/11."
- 14 Barton Gellman, "The Secret World of Extreme Militias," *Time*, September 30, 2010, available at: <http://www.time.com/time/magazine/article/0,9171,2022636,00.html>.
- 15 John Parachini, "Putting WMD Terrorism into Perspective," *The Washington Quarterly* 26:4 (2003): 37–50.
- 16 Hamas leader Abu Shannab, for example, described the use of poison as contrary to Islamic teachings. See *ibid.*, 45.
- 17 Juergensmeyer, Mark, *Terror in the Mind of God: The Global Rise of Religious Violence* (3rd edition) (Berkeley: University of California Press, 2000); Tilly, Charles, *The Politics of Collective Violence* (Cambridge, MA: Cambridge University Press, 2003).
- 18 Victor Asal and R. Karl Rethemeyer, "The Nature of the Beast: Organizational Structures and the Lethality of Terrorist Attacks," *The Journal of Politics* 70:2 (April 2008): 437.
- 19 Bruce Hoffman, "Terrorism Trends and Prospects," in Ian O. Lesser, Bruce Hoffman, John Arquilla, David Ronfeldt, and Michelle Zanini (eds.), *Countering the New Terrorism* (Santa Monica, CA: Rand Corporation, 1999), 20.
- 20 Asal and Rethemeyer, "The Nature of the Beast: Organizational Structures and the Lethality of Terrorist Attacks."
- 21 Gellman, "The Secret World of Extreme Militias."
- 22 Allison, Graham, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (New York: Times Books, 2004), 15.
- 23 Mia M. Bloom, "Palestinian Suicide Bombing: Public Support, Market Share and Outbidding," *Political Science Quarterly* 119:1 (Spring 2004): 61–88.
- 24 Max Abrahms and Karolina Lula, "Why Terrorists Overestimate the Odds of Victory," *Perspectives on Terrorism* 6:4–5 (October 2012): 55.