

## ABSTRACT

**TITLE OF THESIS:** Drugs and Bugs: Narco-terrorists, Bioattacks, and the Lessons of Anthrax

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The Mexican drug cartels are a threat to the U.S. national security due to their financial resources, violent nature, proximity to the United States, and networking and infiltration capabilities. They could become an even larger threat if they applied lessons learned from the 2001 anthrax attack to a future bioattack on the United States. Such lessons could show a cartel how to design an attack simply and cheaply that would exploit the vast gaps of America's meager biodefenses. Given this threat, this thesis asks: *how would a Mexican drug cartel use the 2001 anthrax attacks as a proof of concept to conduct a biological attack within the United States to deter law enforcement counterdrug efforts and intimidate rival drug organizations?*

This thesis attempts to answer this question by applying the threat assessment paradigm as defined by the Government Accountability Office. Within that paradigm, this thesis uses a case study to analyze the 2001 anthrax attack and a scenario to conceive of a plausible way in which a Mexican cartel would launch a bioattack on the United States.

By utilizing these research methods, this thesis found that the cartels are vicious and sophisticated enough to use a biological weapon against a civilian population. A cartel could be motivated to launch a bioattack in order to offset U.S. and Mexican government counter-drug efforts and accumulate power. Additionally, this thesis found that a simple and relatively cheap bioattack could cause enough fear in a population to force policymakers to re-assess their counter-drug policies.

Bioweapon capabilities are continually becoming easier to acquire and cartels are becoming more sophisticated and ruthless. These trajectories will intersect at some point, if they have not already. The United States would benefit from military, law enforcement, and intelligence elements infiltrating, disrupting, and directly confronting the cartels before they gain a near unassailable position granted to them by possessing rapid bioweapon development capabilities.

**DRUGS AND BUGS:  
NARCO-TERRORISTS, BIOATTACKS, AND THE LESSONS OF ANTHRAX**

by



MSSI Class 2010

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The views expressed in this paper are those of the author and do not reflect the official  
policy or position of the Department of Defense,  
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## **CHAPTER ONE**

### **Threat on the Southern Horizon**

## **INTRODUCTION**

### **The Cartels**

The land routes through Mexico have become the most dependable ways to get drugs into the United States. Approximately 90% of all cocaine that enters the United States comes through Mexico.<sup>1</sup> As a result, these routes are very valuable. Control of these routes belongs to several complex indigenous criminal organizations, commonly referred to as drug cartels. Currently, these cartels include the Beltran Leyva Organization, Gulf Cartel, Juarez Cartel, La Familia, Los Zetas, Sinaloa Cartel, and Tijuana Cartel. The money gained from owning these routes makes the Mexican drug cartels some of the most capable non-state actors in the world. It is estimated that these cartels earn between \$18 and \$39 billion from wholesale drug sales within the United States annually.<sup>2</sup> Their annual operating budgets reach billions of dollars and their trafficking networks are global.

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<sup>1</sup> Steve Fainaru and William Booth, "As Mexico Battles Cartels, The Army Becomes the Law," *The Washington Post*, April 2, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/04/01/AR2009040104335.html?nav=emailpage> (accessed June 2, 2010).

<sup>2</sup> Senate Committee on Foreign Relations, *Southern Border Violence: Homeland Security Threats, Vulnerabilities, and Responsibilities*, 111 Cong., 1<sup>st</sup> sess., 2009, 6, <http://www.justice.gov/dea/pubs/cngrtest/ct032709.pdf> (assessed June 2, 2010).

These criminal organizations have reached a level of violence rarely seen throughout history. In a battle for control over these lucrative drug trade routes into the United States, rival cartel members continually engage each other in street battles that produce literal heaps of dead bodies. Any prisoners that are taken are often tortured, mutilated, and beheaded. Where they were once collateral casualties, civilians are now becoming intentional targets of cartels that want to maintain a tight grip over their territories.

Additionally, in an apparent attempt to quell the bloodshed, the Mexican military has been mobilized to confront the cartels. Alas, this step has only escalated the carnage and plunged Mexican society further into chaos. Drug-related murders in Mexico doubled each year from 2006 to 2008, with law enforcement and military personnel accounting for almost ten percent of the 2008 murders.<sup>3</sup>

Increased chaos could be catastrophic since Mexican society and government is already tainted by a degree of corruption that stifles basic government functions and undercuts the fundamental rule of law. To exacerbate matters, the cartels are on course to become even more violent and powerful, which would allow them to exert greater control inside the weakened state. The upward trajectory of the cartels' power combined with the downward course of the legitimate portions of the Mexican state could allow these narco-terrorists to challenge the authority of the Mexican government.<sup>4</sup>

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<sup>3</sup> Senate Committee on Foreign Relations, *Southern Border Violence: Homeland Security Threats, Vulnerabilities, and Responsibilities*, 111 Cong., 1<sup>st</sup> sess., March 30, 2009, 5, <http://www.justice.gov/dea/pubs/cngrtest/ct032709.pdf> (assessed June 2, 2010).

<sup>4</sup> House Foreign Affairs Committee, *The U.S. Government's Domestic Obligations Under the Merida Initiative*, 110 Cong., 2<sup>nd</sup> sess., February 7, 2008, under "Overview," <http://www.justice.gov/dea/speeches/s020708.html> (assessed June 2, 2010).

Furthermore, one of the most wide-reaching and violent collections of criminal groups operating in one of the most unstable countries of the world is inextricably linked to the United States. These organizations' bases of operations are in a neighbor of the United States, they have robust transportation and distribution infrastructures within the United States, and these organizations' survival depends upon Americans purchasing their product.

To summarize:

- The Mexican drug cartels are currently some of the most powerful, capable, and dangerous non-state actors in the world.
- Their base of operations is in Mexico, a nation adjoining the United States.
- The Mexican government is at risk of losing the remainder of its control over the state. The Mexican drug cartels could usurp the government's authority and exploit the distribution of common government services for their own benefit.
- Their livelihood depends upon American drug spending and they will presumably defend access and fight interference to that revenue source vigorously.

These factors combine to form an immediate and formidable threat to U.S. national security. If one of them was motivated to do so, a cartel could pick one of a myriad of ways to kill scores of Americans and disrupt U.S. society. These cartels do not lack motive to attack the United States. Through the Merida Initiative, the United States has appropriated \$1.15 billion since 2008 to fund the Mexican government's law enforcement

and military measures against the cartels.<sup>5</sup> Being an integral financial, logistical, and political supporter of Mexican President Felipe Calderon's military conflict against the cartels makes the United States the possible target of a cartel. This is especially true if U.S. support produces successful counterdrug efforts that substantially pressure the cartels. To relieve the pressure, a cartel may look to cut off U.S. assistance.

### **The Bioweapon Solution**

To reduce U.S. involvement, a cartel could choose to attack the United States with a weapon of mass destruction (WMD). The Literature Review, however, will point out that most of the national security concerns about Mexican drug cartels regarding WMD are focused on a possible Islamic terrorist group exploiting the cartels' drug infiltration capabilities to smuggle its own WMD into the United States. Rarely has it been considered that a Mexican drug cartel may smuggle its own WMD into the United States for the purpose of advancing its own goals. This possibility has been ignored in spite of the fact that these cartels are motivated, ruthless, and capable enough to carry out such an operation. Discounting such a possibility could lead to a strategic surprise proportional to 9/11.

Unfortunately for the United States, the 2001 anthrax attack provided the cartels with a possible method of attack. The 2001 attack revealed facts about the nature of a bioattack and insight into the manner and degree to which the United States was affected. Before, a bioattack may not have been considered a serious option. Now, however, the cartels have had the opportunity to study the responses and reactions of the different

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<sup>5</sup> U.S. Department of State, "The Merida Initiative," under "Initiative's Scope," <http://www.state.gov/p/inl/rls/fs/122397.htm> (accessed June 2, 2010).

facets of U.S. society, to include the media, politicians, and the civilian population. As a result, a cartel has a better idea of what is plausible, feasible, suitable, and viable.

Mexican narco-terrorists have possibly realized that a simple operation that caused little physical devastation could trigger massive reverberations through the U.S. economy and morale. For instance, the 2001 bioattack only killed five people and infected 22, but the U.S. government has spent \$50 billion in connection to the anthrax attacks and preventing the next biological attack.<sup>6</sup> Narco-terrorists may also realize that, in spite of the money spent on biodefenses, the United States is still quite vulnerable to a biological attack. By deconstructing the attack and analyzing its effects, a cartel could assess its goals, judge how successfully a 2001-style attack would meet those goals, and conceive a bioattack that would accomplish its goals more effectively.

Such a bioattack may not need to be completely successful to fulfill a cartel's objectives. Even if a cartel aimed to kill hundreds or thousands of Americans, but only tens died, the attack could still have similar repercussions because of the weapon used. A biological weapon demonstrates sophistication on the part of the user. An organization that conducted a bioattack with some degree of success will be viewed as a serious threat and a formidable enemy whose demands and motivations will garner attention.

In addition to a level of sophistication associated with a group who conducts a bioattack, there is a degree of fear that is inherent in a biological weapon. If the U.S. population was simply told by a national enemy that it was under attack by a biological weapon, then it is plausible that a moderate amount of fear would be generated. The

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<sup>6</sup> U.S. Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, *World at Risk: The Report of the Commission on the Prevention of WMD Proliferation and Terrorism* (New York: Vintage Books, 2008), 25, [http://www.preventwmd.gov/static/docs/report/worldatrisk\\_full.pdf](http://www.preventwmd.gov/static/docs/report/worldatrisk_full.pdf) (accessed June 2, 2010).

actual presence of a biological agent from a bioattack would cause even more fear depending on the dispersal methods and agent used. Infections and deaths from a biological attack could cause mass panic, initiate large scale government spending, and cause U.S. policymakers to reassess their decisions and the decisions of their predecessors.

Another problem exists if a cartel desired to launch a bioattack on the United States. The combination of the stealthy potential of a bioweapon and pervasive corruption inside Mexico could enable a drug cartel to launch an attack and melt into the shadows. A biological weapon is well-suited for an attacker who wants to preserve its anonymity or deceive its target. If an attacker desired, it could design an attack to make the infections appear to result from a natural breakout. The cartel could also take credit for the attack once the time was right and it had made preparations to defend against retaliation and exploit reactionary missteps. Meanwhile, Mexico is the perfect environment to stage a deception operation around the bioattack build-up. Such an operation could hide the cartel's connections to the attack and mislead the target about who was behind the attack. Investigations can come to dead ends due to war-torn conditions of the state and the placement of cartel sources in important government positions to derail searches for the perpetrator of a bioattack. Using a bioweapon and seeking the shelter of Mexico could serve to multiply the cartel's capabilities and power.

The Mexican drug cartels are a threat to the United States because of their immense capabilities and resources, violent nature, proximity to the United States, established channels that penetrate deep within the United States, and control over vast geographic and social swaths of Mexico. What makes them an even greater danger to the

United States is that the cartels have been provided with the outline of an attack plan in the form of the 2001 anthrax attack. Such an attack could show a cartel how to design an attack simply and cheaply that would exploit the vast gaps of America's meager biodefenses that would manipulate U.S. reactions to the cartel's benefit.

## **RESEARCH QUESTION, KEY QUESTIONS, AND ASSUMPTIONS**

### **Key Questions**

To determine the threat capacity of the Mexican drug cartels and the steps that one would take to attack the United States with a biological weapon, several key questions must be answered. This thesis will answer the following questions:

- Why would drug cartels use the anthrax attacks as a proof of concept?
- What would the drug cartels learn from the anthrax attack?
- What motivations exist that determine the possibility and method of a cartel using a bioweapon?
- How would a drug cartel conduct a biological attack?

### **Research Question**

By answering these key questions, the overarching research question of this thesis will be answered. The research question asks:

*How would a Mexican drug cartel use the 2001 anthrax attacks as a proof of concept to conduct a biological attack within the United States to deter law enforcement counterdrug efforts and intimidate rival drug organizations?*

## **Assumptions**

A set of assumptions help guide the direction of this thesis and define its boundaries. This thesis assumes that:

- Cartels intend to stay in business.
- The Mexican drug cartels want to stop being attacked by the Mexican military.
- The Mexican drug cartels desire an end of U.S. counter-drug support to the Mexican government.
- Mexican narco-terrorists would want to change U.S. policy that specifically affects them rather than cause sweeping changes in the American way of life.
- A non-professional bioweapon designer could be found that would have the intellect and mechanical experience to conceive of and build a functional biological agent dispersal device.
- The level of bioforensic technology is not presently sufficient to trace the source of a biological attack that uses multiple agents.
- Additional assumptions relative to the attack scenario will be outlined in Chapter Four.



## JUSTIFICATION FOR RESEARCH

In 2008, the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism produced a report titled *World at Risk*. In it, the Commission makes several conclusions:

- a terrorist attack using a WMD will occur somewhere in the world by 2013;<sup>7</sup>
- of all WMD, nuclear and biological weapons have the potential to kill the largest number of people;<sup>8</sup>
- due to dual use technology and the difficulty of controlling biological material, it is more likely that a biological weapon will be used in this attack than a nuclear weapon;<sup>9</sup>
- the continued worldwide proliferation of biotechnology, though beneficial to humankind in the long run, is also dangerous because it lowers the intellectual and technical barriers surrounding the development of a biological weapon;<sup>10</sup>
- the U.S. government has not done enough to prevent the use of a biological weapon.<sup>11</sup>

These conclusions serve to justify the importance of this thesis. One of the purposes of this thesis is to show how all of the shortcomings pointed out in *The World at Risk* could be exploited to conduct a biological attack on the United States.

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<sup>7</sup> *World at Risk*, xv.

<sup>8</sup> *Ibid.*, xvi.

<sup>9</sup> *Ibid.*, xv.

<sup>10</sup> *Ibid.*, xvi.

<sup>11</sup> *Ibid.*, xvii.

Another purpose of this thesis is to identify the Mexican drug cartels as an emerging threat to the United States and plausible users of a biological weapon. In *The World at Risk*, the Commission to Prevent Weapons of Mass Destruction Proliferation and Terrorism predicts that a WMD attack, most likely with a biological weapon, will occur by 2013 since the biotechnological techniques to produce a biological weapon are becoming more widespread and counterproliferation measures are inadequate. Another part of this equation involves the increasing sophistication and diversity of potential U.S. enemies. Breakthroughs in the capabilities of enemy non-state actors could make an attack by 2013 a conservative estimate. As noted previously, the Mexican drug cartels have extraordinary financial resources and global networking and trafficking capabilities. There are also signs that these cartels are becoming more sophisticated and violent. This thesis argues that, because of their already substantial and possibly growing capabilities and the growing ease of producing a bioweapon, the Mexican narco-terrorists are a threat to launch a bioattack against the United States.

This thesis fills several other Intelligence Community gaps by cataloging the effects and impact of the 2001 anthrax attack, analyzing the value of these effects given by a group that desires to conduct a bioattack against the United States, and uses this analysis to postulate how a group, specifically Mexican narco-terrorists, could attack the United States in the form of an attack scenario. From this analysis and scenario, indications and warnings will be designed to predict when Mexican narco-terrorists might be developing a biological weapon and building up for an attack on the United States.

In summary, this thesis is unique because it focuses on an emerging threat that transforming from a criminal organization into a national security threat to the United

States. Additionally, it discusses the possibility of a Mexican cartel attacking the United States with a biological weapon. This possibility has rarely been considered. Furthermore, this thesis uses a new perspective of the 2001 attack by viewing it as a proof of concept to be used by potential bioattackers.

## **HYPOTHESIS**

*A threat assessment analysis could illustrate that Mexican narco-terrorists are an emerging danger to use a biological weapon to further their own agendas. Such an analysis, informed by lessons learned from the 2001 anthrax attack, can reveal indicators and warnings of their capabilities and preparations to conduct a biological attack.*

## **SCOPE**

As a threat assessment analysis, this thesis will only discuss characteristics of Mexican drug cartels that determine the degree to which they are a threat as defined in an analytic paradigm designed by the Government Accountability Office (GAO). The GAO ascertains the level of a threat by an entity's intent, capabilities, lethality, and precedence of actions. Concerning the 2001 anthrax attack, only aspects that show how the attack can be used as a proof of concept will be covered. This thesis will not speculate on the objectives or motivations behind the anthrax attack. Furthermore, only specific effects from those deemed useful to a future attack will be considered. Although, a drug cartel

could select a variety of weapons with which to attack the United States, the scenario in this thesis will only focus on a biological weapon. Relative to bioweapons, this thesis will exclude the possible use of genetically modified biological agents.

## LITERATURE REVIEW

A literature review indicates that there is a large body of work covering biological weapons and a large body of work covering the Mexican drug cartels; but the body of work combining the two subjects is extremely limited. The resources that do exist on the combined subjects, generally discuss the possibility of drug cartels smuggling terrorists and their WMD into the United States. For example, Andre Hollis states in *Transnational Threats* that terrorist organizations could use drug trafficking networks to smuggle WMD into the United States.<sup>12</sup> A 2005 *New York Times* article reported that former Director of Central Intelligence Porter Goss and former Department of Homeland Security Deputy Secretary Admiral James Loy voiced similar concerns when they testified before Congress.<sup>13</sup> As a result of the limited literature that directly focuses on the subject matter of this thesis, a review of the literature pertaining to the different parts of this thesis was conducted.

The 2001 anthrax attack is the first topic of this thesis. Two accounts of the anthrax attack include Leonard A. Cole's *The Anthrax Letters* and Marilyn W.

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<sup>12</sup> Andre D. Hollis, *Transnational Threats*, ed. Kimberly L. Thachuck (Westport, CT: Praeger Security International, 2007), 26.

<sup>13</sup> Douglas Jehl, "U.S. Aides Cite Worry on Qaeda Infiltration From Mexico," *New York Times*, February 17, 2005. <http://www.nytimes.com/2005/02/17/international/americas/17intel.html> (accessed June 2, 2010).

Thompson's *The Killer Strain*. *The Anthrax Letters* gives a detailed account of the attack from the scientists' and victims' perspectives. Cole describes the events surrounding the infected during. Cole also traces the actions of the epidemiologists and other public health scientists who were trying to solve the investigation and prevent more infections. While Thompson also deconstructs the events and actions of the ground-level actors, *The Killer Strain* also included the high-level government response to the attack. Thompson recounts the perspectives and actions of policy-makers during the attack and shows how these actions led to official policy.

The second area of source research would expand from the anthrax attack and cover the larger theme of biological attacks and bioterrorism which is encompassed in this thesis. The Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism produced a report, *World at Risk*, which details the current state of WMD-related terrorism, measures the possibility of a terrorist attack using WMD, assesses the preparedness of the United States to a WMD attack, and makes recommendations on how the U.S. government could better prevent a WMD attack. This report is focused primarily on nuclear and biological weapons. The Commission believes that the potential for a nuclear or biological attack is growing in spite of the anti- and counterproliferation measures taken by the United States. The Commission goes on to state that it believes that somewhere in the world will be attacked with a WMD by 2013. The Commission's report serves as the justifying foundation for this thesis. Furthermore, this thesis aims to serve as an extended warning of the dangers described in *World at Risk*.

The second book focusing on bioterrorism, *Toxic Terror*, written by arms control expert Jonathan B. Tucker, attempts to understand the motivations of terrorists who might want to acquire and use a biological weapon. This book also discusses the hurdles that terrorists must overcome to acquire or make a biological weapon. The contributors also discuss which biological agents would most likely be acquired and how they would be used on the public. This is accomplished through historical case research of groups who have attempted to acquire or use chemical and biological weapons.

In addition to *Toxic Terror*, *Microorganisms and Bioterrorism*, edited by Burt Anderson, Herman Friedman, and Mauro Bendinelli, will also be a useful source in providing medical and biological information that will help the reader to deduce which pathogen would be an ideal bioterrorism agent. *Microorganisms and Bioterrorism* discusses the medical aspects of several pathogens, including the plague, anthrax, tularemia, smallpox, brucella, and Q fever. The book gives technical descriptions of modes of infection and transmission. *Microorganisms and Bioterrorism*, however, gives no insight into terrorism methods.

The next book covering the topic of biological attacks, *The Challenge of Biological Terrorism* by Anthony H. Cordesman, is a wide-ranging book that looks at problems that terrorists face who want to use a biological weapon and problems that governments face who want to stop these terrorists. Cordesman uses several case studies and provides multiple points of view to discuss the complexities of bioterrorism. Like *World at Risk*, Cordesman points out that the technical challenges involved with developing a biological weapon are becoming easier. Cordesman also explains how a primary characteristic of bioweapons, the ability to attack without warning, is a great

benefit to terrorists and a huge disadvantage in a government's ability to alert the public that can not be compensated for.

The third major topic of this thesis involves the Mexican drug cartels. Due to the constant changing inherent in the Mexican drug trafficking environment, new books on the subject quickly become dated. As a result, newspaper articles are the most effective at staying abreast of the fluid nature of the drug war and cartel activities. Key internet sources include webpages that are dedicated the Mexican conflict and contains compilations of news articles and expositions. Three such sources are the *Los Angeles Times*' "Mexico Under Siege" webpage, *National Public Radio*'s "Mexican Cartels: Drug Organizations Extending Reach Farther into U.S." website, and *The Washington Post*'s "Mexico at War" website. These webpages cover multiple aspects of the drug war, including the Mexican government perspective, civilian perspective, cartel histories, and updated events. In addition to articles that are found in the respective print media, these webpages also contain multimedia reports that concentrate on a small facet that is representative of the entire conflict.

There are several gaps found in the body of literature that this thesis will address. Little literature has been found that considers the value of the 2001 anthrax attacks as a template for future bioattacks. By researching literature that discusses the details of the anthrax attacks, the viability of a bioterror attack of any kind, and the motivations of the drug cartels, this thesis will attempt to combine all of these subjects to provide an answer not only on the viability of conducting a bioattack based on the lessons learned from the anthrax attacks, but also on ways that narco-terrorists could increase the lethality and destructiveness of such an attack and the effects that it would have on the United States.

## **RESEARCH METHODOLOGY**

### **Data Collection Strategy**

Research for this thesis will be drawn from open sources. Information for this thesis will be gathered from hard copy sources, online sources, and interviews of subject matter experts in the U.S. Intelligence Community and other government agencies. The above literature review provides an example of the types of sources that will be researched for this thesis. In addition to books, journals and articles will also be researched. Additionally, the internet and online databases will also be utilized. Databases accessed through the DIA and FBI intranets will be used to find articles, assessments, and reports pertaining to this thesis topic. Interviews of the FBI's Amerithrax squad members will also be conducted to gain insight into the anthrax attacks and the investigation.

### **Analytical Strategy**

The purpose of this thesis is to assess the threat presented by a Mexican drug cartel to conduct a biological attack on the United States based on lessons learned from the 2001 anthrax attack. This threat assessment will be composed of a case study of the 2001 attack and a scenario of a possible path a cartel would take to plan and launch its own bioattack on the United States. These methodologies, as well as other qualitative analysis of the drug cartels, will help determine whether the drug cartels are a threat based upon the requirements laid out by the Government Accountability Office (GAO).



These requirements include lethality, precedent, capability, and intent which are defined in this thesis as ruthlessness, capability/sophistication, and motivation.

This thesis asks an exploratory question with the goal of formulating indications and warnings predicting the use of a biological weapon by Mexican narco-terrorists against the United States. This thesis asks, “How would narco-terrorists attack the United States with a biological weapon?” In order to answer that, the following questions must also be asked: “*What* happened during the 2001 Anthrax Attacks?” and “*How* was the anthrax attack conducted?” According to Robert Yin in *Case Study Research*, a case study is best suited to answer questions that ask “what” and “how”.<sup>14</sup> Yin defines a case study as “an empirical inquiry that

- investigates a contemporary phenomenon within its real-life context, especially when
- the boundaries between phenomenon and context are not clearly evident.”<sup>15</sup>

The findings of this case study will serve as a foundation for the remainder of the thesis. Answers to the questions implicit in the case study, “*What* happened during the 2001 Anthrax Attacks?” and “*How* was the anthrax attack conducted?” will show a relationship between the results of the anthrax attack and the needs and goals of a drug cartel. Furthermore, these answers will demonstrate how the lessons learned from the anthrax attack could be of use to narco-terrorists. To satisfy the requirements of a threat assessment, the case study will also explore the precedent that was established by the anthrax attack and its lethality.

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<sup>14</sup> Robert K. Yin, *Case Study Research*, 2<sup>nd</sup> ed. (Thousand Oaks, CA: SAGE Publications, 1994), 21.

<sup>15</sup> Ibid., 13.

The results of the case study combined with qualitative analysis of the Mexican drug cartels will be used to form a scenario on how a cartel might conduct a bioattack on the United States. Scenario analysis is ideal for contending with “what if” questions that have multiple possible outcomes.<sup>16</sup> Additionally, most scenarios deal with questions that usually have inherently unknowable answers.<sup>17</sup> The focal question of a scenario can not be answered with a “yes” or “no”.<sup>18</sup> Furthermore, scenarios generally deal with people or organizations relative to their environments.<sup>19</sup> Richard B. Heydinger and Rene D. Zentner describe scenarios more as “a technique of judgment and art than of science.”<sup>20</sup> Specific elements of a cartel’s capabilities and motivations will be selected from all of the variables to build the scenario.<sup>21</sup> Assumptions about these elements will then be outlined.<sup>22</sup> Unlike other scenario analyses that consider multiple outcomes, this thesis will only contain a scenario of one possible upshot, but acknowledges that other end results are possible.

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<sup>16</sup> Richard B. Heydinger and Rene D. Zentner, *Applying Methods and Techniques of Futures Research*, eds. James L. Morrison, William L. Renfro, and Wayne I. Boucher (San Francisco: Jossey-Bass, 1983), 52.

<sup>17</sup> Institute for Analysis, *Mapping the Future*, (Institute for Analysis, 2008), 86.

<sup>18</sup> *Ibid.*, 14.

<sup>19</sup> *Ibid.*

<sup>20</sup> Heydinger and Zentner, *Applying Methods and Techniques*, 54.

<sup>21</sup> *Ibid.*, 58.

<sup>22</sup> *Ibid.*, 59

## OVERVIEW OF REMAINING CHAPTERS

Chapter Two will focus on the 2001 anthrax attack. The chapter will provide a description of anthrax, including symptoms, infection pathways, life cycle, and infection and lethality statistics. The chapter will continue by reviewing the sequence of events of the anthrax attack. Chapter Two will culminate by discussing the effects of the 2001 bioattack and how they would be important to narco-terrorists who desire to attack the United States with a biological weapon.

Chapter Three will discuss the Mexican drug cartels. This chapter will provide a brief history and current snapshot of the major cartels now in existence. The chapter will go on to ask if a cartel is a threat to use a biological weapon against the United States. This question will be answered by looking at the overall ruthlessness, capabilities, and motivations of the cartels.

Chapter Four will consist of a scenario that outlines one of the possible ways that a drug cartel would commit a bioattack against the United States. The scenario will follow scenario planning methodology as described in *Applying Methods and Techniques of Futures Research* and *Mapping the Future*. The scenario will build on Chapter Three by continuing to describe possible attack motivations and the benefits that a cartel would hope to derive from such an attack. The scenario will go into the biological selection process, the bioweapon development plan, and the attack plan. The chapter will also introduce the principles of denial and deception into this thesis and consider different ways that the attacker could use the bioattack to deceive and confuse the target.

Chapter Five will contain indications and warnings that could predict when and how narco-terrorists would launch a biological weapon on the United States. Such indicators will concentrate on the trajectories of a cartel's sophistication and violence. This chapter will also select specific steps from the patterns of other non-state actors who have attempted to use biological weapons, such as the Japanese cult, Aum Shinrikyo, to compare to possible steps that a cartel may take preceding an attack. Chapter Five will also discuss possible signs of deception employed by a cartel and describe how deception might appear to the target.

Chapter Six will conclude the thesis by summarizing the covered material and present the findings and results. Additionally, the chapter will summarize the manner in which the thesis answered the research and key questions. The conclusion will also assess the degree to which the thesis aligned with hypothesis. Finally, the conclusion will include policy recommendations and areas of future research relative to the subject matter of this thesis.

## **CHAPTER TWO**

### **Just an Isolated Case**

#### **OVERVIEW OF THE 2001 ANTHRAX ATTACK**

In 2001, five people were killed from attacks involving anthrax. The anthrax was delivered by letters mailed to Senators Tom Daschle and Patrick Leahy, NBC news anchor Tom Brokaw, and the editor of the New York Post. Additional letters may have been mailed to high profile members of CBS News, ABC News, and American Media, Inc., since employees were infected with anthrax, but no letters were ever found. The letters, however, missed their intended targets, hitting instead random victims that were exposed to anthrax that escaped from its envelopes en route to their target destinations. In addition to the victims, the discovery of anthrax from these letters shut down the U.S. Capitol for months and crippled the U.S. mail system. Billions of dollars have been spent cleaning up the damage, investigating the attacks, treating the victims, and preventing another biological attack. To prevent future attacks, biodefense labs have been built, static security sensors have been installed in high traffic choke points, government bioterrorism projects have been funded, thousands of personnel have been hired in hundreds of different fields, and intelligence and investigations concerning bioattacks have been given a higher priority. America's enemies have taken note on the lives lost and damage caused by such a relatively simple operation. This chapter will discuss the

characteristics of anthrax, the events of the 2001 anthrax attack, and the effects that the attack had on the United States. Additionally, the effects will be viewed from the perspective of a narco-terrorist group that plans to launch a biological attack against the United States in the future.

## **ANTHRAX CHARACTERISTICS**

Anthrax is a bacterium scientifically known as *Bacillus anthracis*. Anthrax is commonly found in nature and regularly infects cows, sheep, and goats. Anthrax can also be found in the soil around the carcasses of infected animals. Anthrax is not transmissible between animals.<sup>23</sup>

### **Anthrax Life Cycle**

While outside of a host organism, Anthrax lies dormant in the form of a spore. As a spore, anthrax is protected by a hard cover that is resistant to extreme environmental conditions. Additionally, while in spore form an anthrax bacterium can exist for years without nutrients or water. Once an anthrax bacterium is in a favorable environment, such as a host animal, it transforms into a vegetative state where it can germinate and multiply.<sup>24</sup> Once in a host, anthrax produces toxins that kill surrounding host cells. As the anthrax multiplies within the host and the number of anthrax cells grows, more toxin is produced by each bacterium and more host cells die. If the infection is successful, then

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<sup>23</sup> Marilyn W. Thompson, *The Killer Strain*, (New York: HarperCollins, 2003), 8.

<sup>24</sup> National Institute of Allergy and Infectious Diseases, "Anthrax," <http://www.niaid.nih.gov/topics/anthrax/Pages/cause.aspx> (accessed on April 19, 2010).

enough damage is done to tissues and organs to kill the host. The death of the host is essential to the survival of the anthrax cells. Since anthrax can not be transmitted directly from host to host, the host must die so that the anthrax cells can be re-introduced into the environment and have the opportunity to infect another animal and multiply further. This is the basic life-cycle of anthrax.<sup>25</sup>

### **Types of Infection**

There are three types of anthrax infection: cutaneous, gastrointestinal, and inhalation. Cutaneous anthrax occurs when anthrax enters the host through an opening in the skin, such as an abrasion or cut. Inhalation anthrax occurs when the host breathes in anthrax spores and they lodge themselves in the lungs. Gastrointestinal anthrax occurs by ingesting anthrax spores.

**Cutaneous Anthrax** Of the three forms of infection, cutaneous is the most common. Naturally occurring cutaneous anthrax generally results from handling body parts of infected animals. Once infected, a small blister forms in one to twelve days.



**Figure 1. Cutaneous Anthrax Infection**

**Source:** Center for Disease Control and Prevention, “Anthrax: Images: Cutaneous Anthrax,” <http://www.bt.cdc.gov/agent/anthrax/anthrax-images/cutaneous.asp> (accessed June 2, 2010).

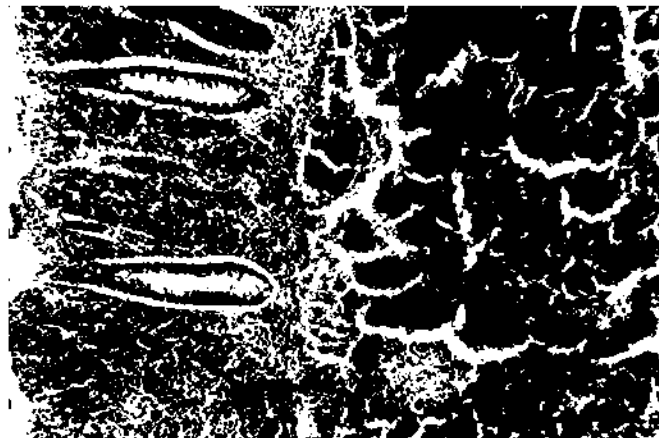
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<sup>25</sup> Thompson, *Killer Strain*, 17.

Untreated, the blister can grow into a large black scab, such as the one in Figure 1.

Headaches and fever may also accompany the skin lesion. From there, the infection can become systemic and spread throughout the body. The survival rate of an untreated victim is 80%. The survival rate climbs to 99% if the victim is treated with antibiotics.<sup>26</sup>

**Gastrointestinal Anthrax** Eating undercooked anthrax-contaminated meat causes gastrointestinal anthrax. At one to seven days after exposure, initial symptoms, including lesions in the mouth and throat, fever, and swollen or painful lymph nodes, arise. Anthrax bacteria that reach the lower intestine may cause abdominal pain and bloody diarrhea. The survival rate is 40-75%.<sup>27</sup> Figure 2 is an example of an anthrax infection of the large intestine causing a hemorrhage of the mucosa and submucosa.



**Figure 2. Histopathology of Anthrax Infection of Large Intestine**  
**Source:** eMedicine, “CBRNE-Anthrax Infection,” under “Clinical,”  
<http://emedicine.medscape.com/article/830004-overview> (accessed June 3, 2010).

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<sup>26</sup> Burt Anderson, Herman Friedman, and Mauro Bendinelli, ed., *Microorganisms and Bioterrorism*, (New York: Springer, 2006), 84.

<sup>27</sup> Anderson, Friedman, and Bendinelli, eds., *Microorganisms and Bioterrorism*, 85.



**Inhalation Anthrax** Inhalation anthrax is the most fatal of the three modes of infection. Untreated, the survival rate is 10-20%. Historically, textile workers and ranchers have acquired inhalation anthrax by breathing in aerosolized spores while handling and processing infected animal hides.

Within two to sixty days of when the spores are inhaled, the victim experiences fatigue, soreness, and fever. With inhalation anthrax, spores deposit deep in the lungs and transform into vegetative cells and germinate. These cells release toxins that begin destroying surrounding lung tissue. Such tissue damage causes swelling and fluid accumulation as illustrated in Figure 3. Once in the lungs, macrophages (immune cells)



**Figure 3. Chest X-ray of Mediastinal Widening and Pleural Effusion Caused by Inhalation Anthrax Infection**

*Source:* Center for Disease Control and Prevention, “Anthrax: Images: Inhalation Anthrax,” <http://www.bt.cdc.gov/agent/anthrax/anthrax-images/inhalational.asp> (accessed June 3, 2010).

attack and encapsulate the bacteria, but do not kill it. Instead, the macrophages transport active anthrax to the lymph nodes. While in the lymph nodes or en route, the macrophages send a signal to T-cells ordering them to destroy the macrophage. The T-cells do so and release the active anthrax in the lymph nodes or other parts of the body.

From the lymph nodes, the bacteria have access to the entire lymphatic and circulatory systems and have the opportunity to infect multiple organs.<sup>28</sup>

## **SEQUENCE OF EVENTS FROM SEPTEMBER TO NOVEMBER 2001**

### **First Phase**

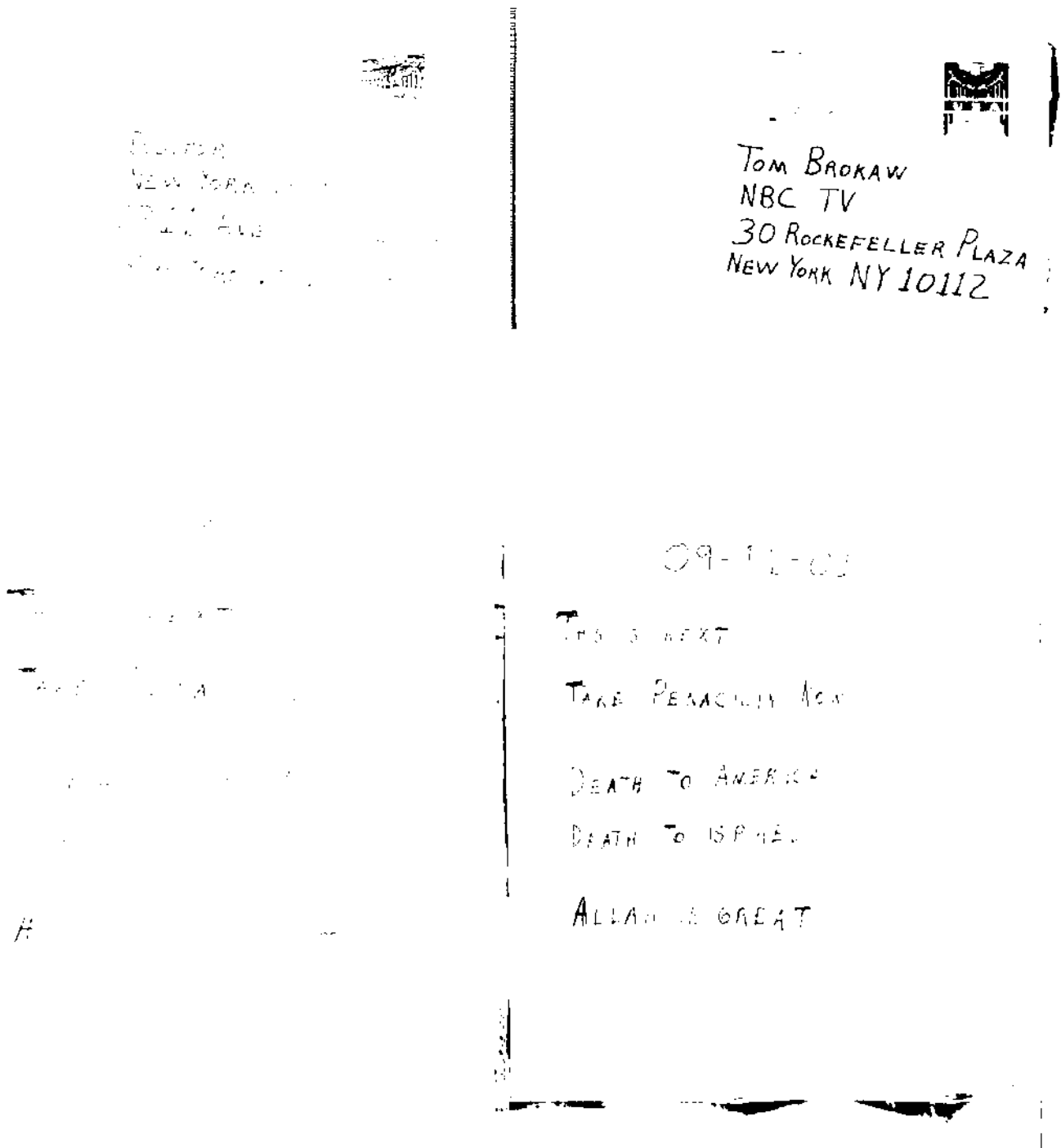
The first biological weapon attack on the United States began on the 17<sup>th</sup> or 18<sup>th</sup> of September, 2001. Two envelopes containing a threat letter and anthrax were mailed from a mailbox on Nassau Street in Trenton, New Jersey between 5:00pm, September 17<sup>th</sup> and noon on September 18<sup>th</sup>.<sup>29</sup> These envelopes were mailed to Tom Brokaw, the news anchor at NBC News, and to the “Editor, New York Post”.

These envelopes and letters would eventually be recovered. Both letters were identical (photographs of which are contained in Figure 4 on the following page). In addition to these letters, at least one other letter was mailed at approximately the same time. It is known with almost certitude that, based on the infection timeframe and level of contamination, another letter was mailed to the National Enquirer, which is owned by American Media, Inc (AMI) and is headquartered in Boca Raton, Florida. This letter was never recovered. It is also possible that letters containing anthrax were mailed to ABC News and CBS News. However, it is equally possible that the presence of anthrax at the

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<sup>28</sup> Darin Steele, interview by author, Washington, D.C., April 22, 2010.

<sup>29</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 4, <http://www.justice.gov/amerithrax/docs/amx-investigative-summary.pdf> (accessed April 19, 2010)



**Figure 4. Anthrax Letters to New York Post Editor and Tom Brokaw**  
*Source:* FBI, "Anthrax Letters," <http://www.fbi.gov/pressrel/pressrel01/102301.htm> (accessed June 3, 2010).

offices of ABC News and CBS News was due to cross-contaminated mail.<sup>30</sup>

On October 4<sup>th</sup>, 2001 news arose that Robert Stevens, an employee at AMI, had somehow contracted anthrax. Since the 9/11 attacks had just recently occurred, officials felt that they should downplay the seriousness of Stevens infection. Later on October 4<sup>th</sup>, Health and Human Services Secretary Tommy Thompson stated in a press briefing that the Stevens case was an isolated event and that bioterrorism was not suspected.<sup>31</sup> Stevens died from his infection on October 5<sup>th</sup>. No one yet knew, but Stevens was the first fatality of the anthrax mailings.

### **Second Phase**

In spite of official and media reassurances that Stevens was an isolated and benign event, investigators began to suspect on October 10<sup>th</sup> that the presence of anthrax in the AMI building was due to the deliberate mailing of spores.<sup>32</sup> These suspicions would soon be validated, because, on October 9<sup>th</sup>, more envelopes containing anthrax were mailed, launching the second phase of the attack. The letters were postmarked Trenton, New Jersey and were processed at the Hamilton, New Jersey Processing and Distribution Center. These letters were addressed to Tom Daschle, the Democratic Senator from South Dakota, and Patrick Leahy, the Democratic Senator from Vermont.

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<sup>30</sup> Darin Steele, interview by author, Washington, D.C., April 22, 2010.

<sup>31</sup> Leonard Cole, *The Anthrax Letters* (Washington, D.C.: Joseph Henry Press, 2003), 18.

<sup>32</sup> R. William Johnstone, *Bioterror: Anthrax, Influenza, and the Future of Public Health Security* (Westport, CT: Praeger Security International, 2008), 8.

The return address was, "4<sup>th</sup> Grade, Greendale School, Franklin Park NJ 08852".<sup>33</sup>

(Photographs of which are contained in Figure 5 below).

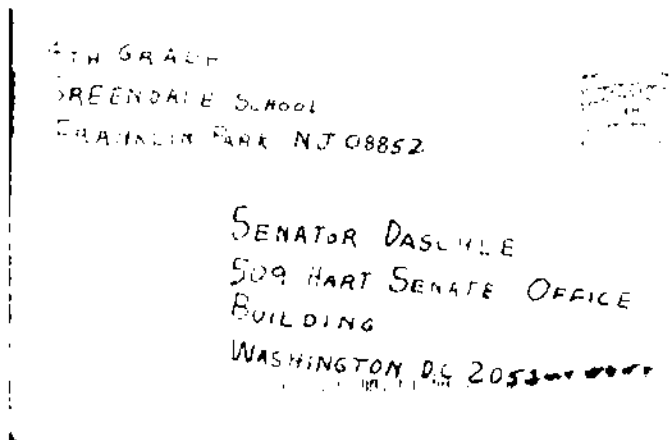
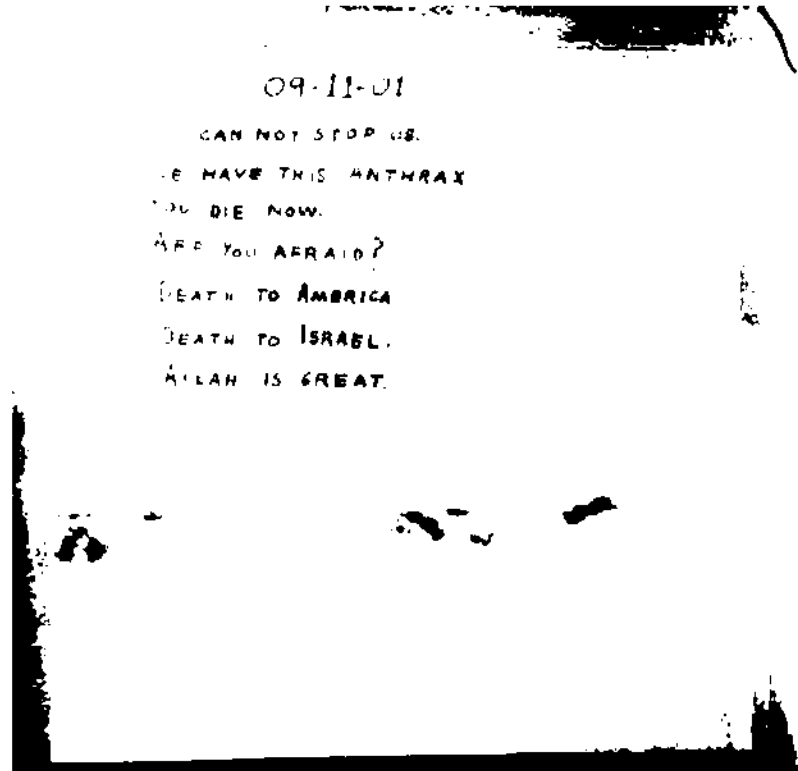
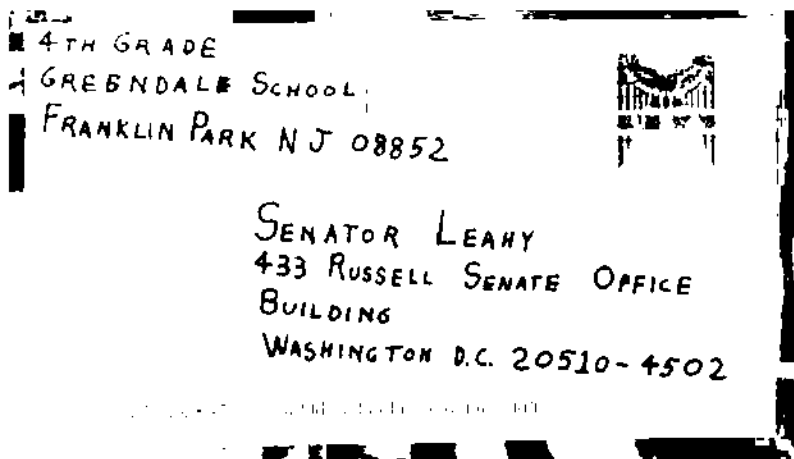


Figure 5. Anthrax-containing Letters Mailed to Senators Leahy and Daschle

Source: FBI, "Anthrax Letters," <http://www.fbi.gov/pressrel/pressrel01/102301.htm> (accessed June 3, 2010).

On October 14<sup>th</sup>, two Hamilton, New Jersey postal facility workers, Patrick O'Donnell and Norma Wallace, began showing symptoms of anthrax infection. On

<sup>33</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 3.

October 15<sup>th</sup>, Jyotsna Patel, another Hamilton facility employee, began exhibiting symptoms.<sup>34</sup>

Also on October 15<sup>th</sup>, an intern opened the October 9 letter addressed to Senator Daschle. Once opened, white powder anthrax spilled from the letter. Twenty-eight people were exposed to the anthrax from this letter.<sup>35</sup> Although no one who was exposed became infected due to the quick response and treatment, this level of exposure shows how quickly and easily the anthrax spread from a letter that was contained minutes after it was opened.

On October 16<sup>th</sup>, Leroy Richmond, Thomas Morris, Joseph Curseen, and an unnamed person, four postal employees who worked at the Washington, D.C. Brentwood facility, began exhibiting initial symptoms of anthrax infection.<sup>36</sup> Richmond's inhalation

anthrax infection would be confirmed on October 21<sup>st</sup>. As a result, the mail processing floor of the Brentwood facility and the Anne Arundel County facility in Maryland, where Richmond worked, were closed.<sup>37</sup> Joseph Curseen died on October 22<sup>nd</sup>. His infection was confirmed on October 26<sup>th</sup>.<sup>38</sup>

On October 17<sup>th</sup>, Linda Burch, who worked at a New Jersey accounting office, displayed symptoms of infection. The accounting firm received mail directly from the Hamilton postal facility. Burch was likely exposed to anthrax by cross-contaminated

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<sup>34</sup> Johnstone, *Bioterror*, 10.

<sup>35</sup> *Ibid.*

<sup>36</sup> *Ibid.*

<sup>37</sup> *Ibid.*, 12.

<sup>38</sup> *Ibid.*, 13.

mail. It is not known with certainty if Burch was exposed to the September or October letters.<sup>39</sup>

Teresa Heller, Claire Fletcher, Richard Morgano, and Johanna Huden were all infected with anthrax from the first mailings, developed symptoms early on, but were not diagnosed until much later. The delayed diagnoses caused initial confusion about which letter infected these victims. Heller, a West Trenton, New Jersey mail carrier, developed cutaneous anthrax symptoms on September 29<sup>th</sup>, but was not diagnosed until October 18<sup>th</sup>. Fletcher, a CBS News mail handler, showed signs of cutaneous anthrax on October 1<sup>st</sup>, but also was not diagnosed until October 18<sup>th</sup>. Morgano, a Hamilton facility postal worker, also was diagnosed on the 18<sup>th</sup> in spite of showing symptoms of cutaneous anthrax on September 26<sup>th</sup>. As a result of Morgano's diagnosis, the Hamilton facility was shut down.

On October 19<sup>th</sup>, *New York Post* reporter Johanna Huden was diagnosed as having cutaneous anthrax. Huden, however, was symptomatic beginning on September 22<sup>nd</sup>, making her the first victim infected by the attack.<sup>40</sup>

In addition to Huden's diagnosis, the letter addressed to "Editor, New York Post" was found unopened on October 19<sup>th</sup>.<sup>41</sup> This letter was found a month, possibly to the day, after it was mailed. By this time, two employees had already developed symptoms of cutaneous anthrax. One more mailroom employee would become infected several days after the letter was removed the Post building. This incident represented the ability of the anthrax to contaminate an area and remain infectious.

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<sup>39</sup> Cole, *Anthrax Letters*, 92.

<sup>40</sup> *Ibid.*, 53.

<sup>41</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 4.

Brentwood postal facility employee Thomas Morris was admitted into the hospital on October 21<sup>st</sup> with suspected inhalation anthrax. Morris died later that day. His diagnosis of inhalation anthrax was confirmed on October 23<sup>rd</sup>.<sup>42</sup> Morris, along with another Brentwood employee who was diagnosed with inhalation anthrax on October 22<sup>nd</sup>, was infected by one of the second phase letters.<sup>43</sup>

On October 22<sup>nd</sup> and 23<sup>rd</sup>, two *New York Post* mail room employees were diagnosed with cutaneous anthrax. The symptoms of the October 22<sup>nd</sup> victim arose on October 19<sup>th</sup>, but investigators assumed that both people were the victims of the September mailings.<sup>44</sup>

David Hose, who worked in the mail room of the Northern Virginia State Department annex, showed signs of inhalation anthrax infection on October 21<sup>st</sup>.<sup>45</sup> He was most likely exposed to the Leahy letter, which was still undiscovered when he became symptomatic. The Leahy letter was erroneously routed to the annex since the zip code was misread. The letter would then be routed to the Capitol. The letter was found on November 16<sup>th</sup>.<sup>46</sup>

### **Random Contamination**

Kathy Nguyen, a New Yorker who had no direct connection to anywhere that the anthrax letters had travelled to or through, was suspected of contracting inhalation

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<sup>42</sup> Johnstone, *Bioterror*, 12.

<sup>43</sup> *Ibid.*, 13.

<sup>44</sup> *Ibid.*, 14.

<sup>45</sup> Cole, *Anthrax Letters*, 67.

<sup>46</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 4.



anthrax when she checked into a hospital on October 28<sup>th</sup>. The diagnosis was confirmed on October 30<sup>th</sup> and she died on October 31<sup>st</sup>. Investigators assessed that her mail was cross-contaminated by anthrax from one of the anthrax letters.<sup>47</sup>

Ottillie Lundgren, a 94 year-old woman who rarely left her Connecticut home, was another victim of cross-contaminated mail and the last known fatality of this bioweapon attack. She checked into a hospital on November 16<sup>th</sup>. On November 21<sup>st</sup> she was confirmed to have had inhalation anthrax and died later that day. Anthrax spores were found on the mail sorters at the Connecticut mail center that processed her mail.<sup>48</sup>

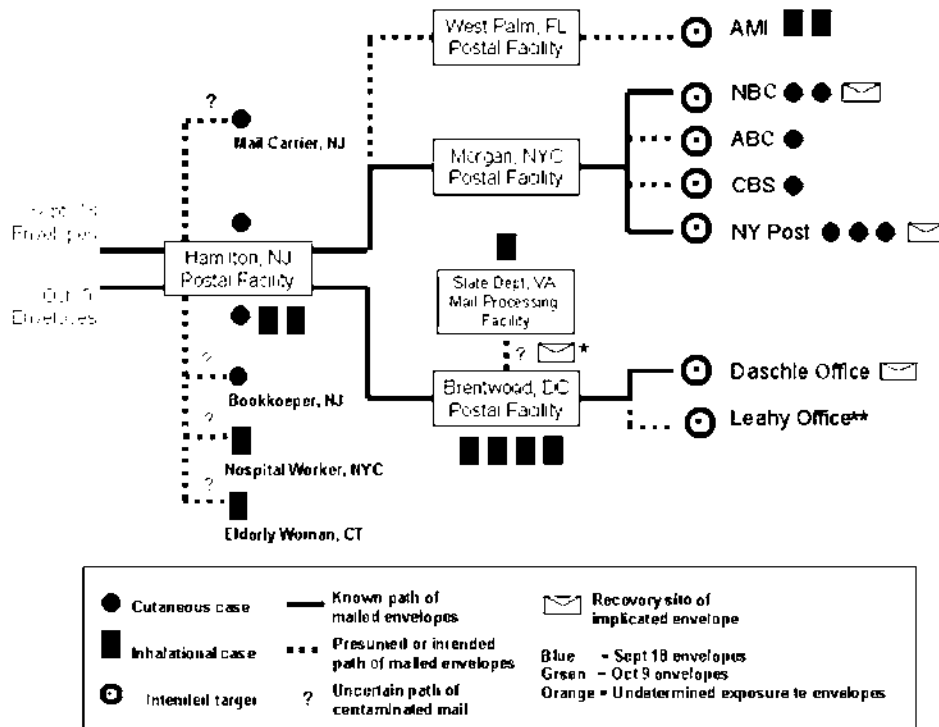
The anthrax attack of 2001 can be viewed as a precision guided missile attack, where the poison envelopes served as the projectiles that were launched from Trenton, New Jersey and targeted New York City, Washington, D.C., and Boca Raton, Florida. The projectiles' contrails, however, were just as dangerous as the actual projectiles. Based on the addressees on the envelopes, the attack missed its intended targets. Instead, it infected those who crossed the trails left by the envelopes. The deadly trail of the letters can be traced on Figure 6 on the following page. Additionally, Figure 6 shows how the letters missed their intended targets and, instead, hit those that were most vulnerable to an attack that transformed mail delivery into a guidance system: the postal facility workers. During the two month duration of the attack, five people were killed and twenty-two were infected with either cutaneous or inhalation anthrax. Additionally, numerous buildings were contaminated by the anthrax trails left behind. Some of these buildings were shut down for years and millions of dollars were spent to decontaminate

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<sup>47</sup> Anthony H. Cordesman, *The Challenge of Biological Terrorism* (Washington, D.C.: CSIS Press, 2005), 19.

<sup>48</sup> Cole, *Anthrax Letters*, 104-109.

and repair them. Furthermore, the attack generated a level of fear from the public, the media, and the government that was extremely disproportionate to the miniscule death toll. An entire nation was put on high alert, spending (and continuing to spend) billions of dollars to prevent this attack from occurring again.



**Figure 6. Path of September 18th and October 9th Letters**

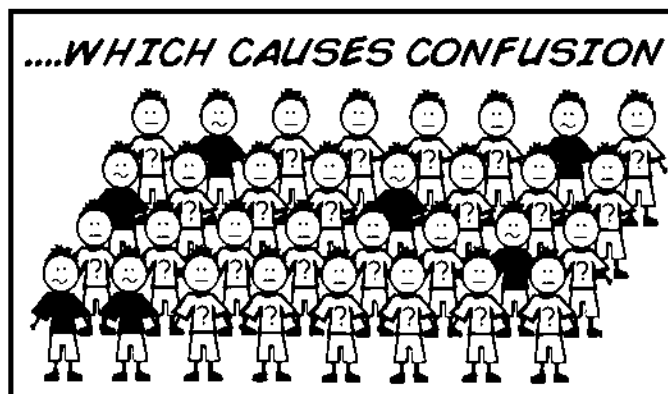
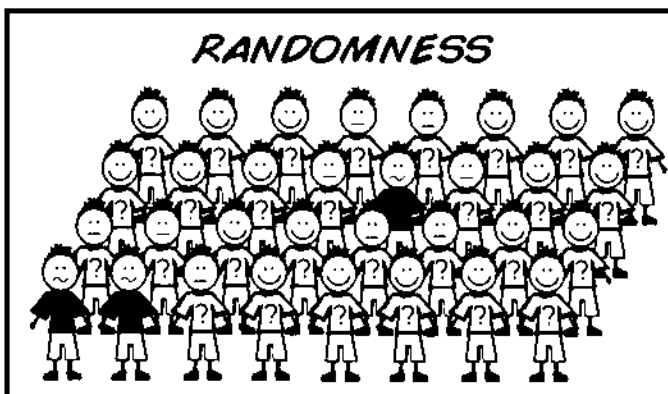
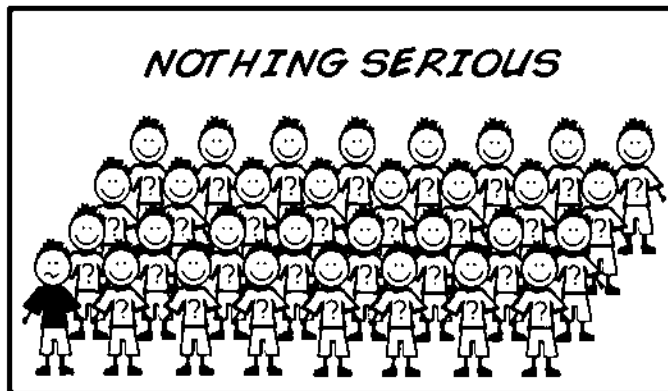
**Source:** Kimberly M. Thompson, Robert E. Armstrong, and Donald F. Thompson, *Bayes, Bugs, and Bioterrorists: Lessons Learned from the Anthrax Attacks* (Washington, D.C.: National Defense University Center for Technology and National Security Policy, 2005), 28, <http://www.ndu.edu/CTNSP/ducUploaded/DTP14%20Bayes%20Bugs%20Bioterrorists.pdf> (accessed June 3, 2010).

## **IMPACT ON THE UNITED STATES**

The anthrax attack affected the United States in a variety of ways. The attack can not be considered successful because the intent of the attacker remains unknown. Instead, the attack's effects must be analyzed to discern its impact on the United States. The different ways that the attack affected the country would be important to narco-terrorists who would consider launching a biological attack on the United States in the future. Fatalities, casualties, fear, infrastructure damages (contamination), government costs, and overall economic damage are primary effects of the attack that narco-terrorists would examine further. Depending on the goals of a drug trafficking organization and the objectives of its bioattack, it would modify the magnitude of each of these effects.

### **Fear**

The realization that the anthrax infections were the result of an attack started off rather quietly, even though the 9/11 attacks happened within weeks of the diagnoses. This fact is due to three circumstances. First, diagnoses of the infections as anthrax took a while. Determining the cause of the anthrax also took a while. Additionally, the sequential order that the anthrax victims were diagnosed was spread out geographically. Since it was spread out, different health agencies would be responsible for diagnosing, investigating, mitigating, and reporting the infections. Therefore, it took time for the news, and concern, to disseminate.



This figure illustrates the evolution of fear in the minds of the general population and the government officials responsible for the public's well-being during the beginning phases of the anthrax attacks. Fear was generated due to the random dispersal of victims and the confusing order in which victims were discovered. The first fatality, Robert Stevens, was dismissed as a natural occurrence and everyone remained calm (represented by all of the smiling faces). However, Ernesto Blanco's suspected anthrax infection and discovery of anthrax spores at Blanco's and Stevens' workplace, AMI, caused officials to become more suspicious of a deliberate pathogenic release and

**Figure 7. How the Anthrax Attack Caused Fear in the Population**

the calm disposition faded slightly (represented by slightly fewer smiling faces). Once more victims confirmed that the anthrax infections were not natural or accidental, calm disappeared completely (represented by no smiling faces).

To compound the problem, it was discovered that Robert Stevens was not the first victim of the attack. Johanna Huden developed cutaneous anthrax eight days before Stevens' symptoms became public.<sup>49</sup> Huden, however, was not diagnosed until October 19<sup>th</sup>; almost a month after the onset of her symptoms and two weeks after Steven's death.<sup>50</sup> This example illustrates the geographic randomness (Huden was infected in New York City and Stevens was infected in Boca Raton, Florida) of the attack and the lack of sequential order relative to disease onset and victim discovery. This randomness caused confusion and the lack of order made it difficult to establish a pattern while it was happening. Confusion was expressed to the public through the media. The public had to face the unknown due to the confusion and lack of answers. Americans did not know who was responsible for this attack, exactly how this attack happened, what the next phase of the attack would be, or when it would happen. Fear of the unknown led Americans to worry about what would happen next.

Dread and concern felt by Americans during the anthrax attack can best be quantified by the actions that they took when they were afraid. When people are afraid, a common reaction is to defend against the threat. In the case of the anthrax attack, defending against the attack could include such actions as getting screened for anthrax at the hospital, getting antibiotics, buying protective personal equipment (gas masks and protective suits), and haphazardly securing buildings.

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<sup>49</sup> Cole, *Anthrax Letters*, 1-3, 21, 53.

<sup>50</sup> Ibid.

To gain a relative perspective about the magnitude of the defense reactions to the anthrax attacks, it is helpful to compare medical statistics to those of the sarin attack conducted by the cult, Aum Shinrikyo, in Tokyo, Japan on March 20<sup>th</sup>, 1995. The sarin attack occurred on several Tokyo subway trains, killing twelve people and injuring 5,000.<sup>51</sup>

To understand the full effects of fear caused by the anthrax and sarin attacks, it is important to discuss the worried well. The worried well seek medical treatment after a terrorist attack out of fear or concern that they may be injured even though they display no wounds or symptoms. This category of patient could potentially be huge after an attack and the numbers could vary erratically, even between similar attacks. The worried well could number up to twenty times more than those actually infected and have the capability to swamp a hospital or local medical infrastructure.<sup>52</sup> During the Tokyo attacks, 85% of the patients were suffering from anxiety or psychosomatic issues and displayed no symptoms of sarin exposure.<sup>53</sup> The worried well outnumbered the victims of sarin exposure 4,000 to 1,000.<sup>54</sup>

Comparatively, after the initial realization of the anthrax attack, 32,000 people began antibiotic treatment.<sup>55</sup> Not all of these people can be considered worried well,

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<sup>51</sup> Cordesman, *Challenge of Biological Terrorism*, 16.

<sup>52</sup> U.S. Air Force, Counterproliferation Center, *The "Worried Well" Response to CBRN Events: Analysis and Solutions*, by Fred P. Stone, Future Warfare Series no. 40, Air University (Maxwell, AL: Air University, 2007), 1, <http://www.au.af.mil/au/awc/awcgate/cpc-puhs/stone.pdf> (accessed June 3, 2010).

<sup>53</sup> Jonathan B. Tucker, "What the Anthrax Attacks Should Teach Us," Hoover Institution, under "Establish Systems for Triage in the Event of an Attack," <http://www.hoover.org/publications/digest/4478206.html> (accessed June 4, 2010).

<sup>54</sup> Pamela L. Griset and Sue Mahan, *Terrorism in Perspective* (Thousand Oaks, CA: Sage Publications, 2003), 300.

because many of them were instructed by public health officials to take them. However, this number still represents fear of infection, not fear for one's self but fear for others. When public officials or medical professionals exercise unsolicited caution out of fear of high casualties or spread of infection, it becomes a sort of institutional fear that can still lead to panic and overtaxing of the medical infrastructure. This type of fear could be more damaging than fear felt and acted upon by individuals. Some reports, however, state that Ciprofloxacin (the antibiotic taken to cure anthrax infections) sales increased 300%-600% after the anthrax attack, which illustrate that individuals did act out of fear.<sup>56</sup>

Besides the worried well, many other Americans also felt fear. In fact, a poll released by ABC and the *Washington Post* on October 16<sup>th</sup>, 2001 stated that 54% of those polled were "very" or "somewhat" worried that a friend, relative, or they would be an anthrax victim.<sup>57</sup> This outcome is fascinating considering that, by October 16<sup>th</sup>, only one person had died from the attack. Furthermore, it was an attack that used a pathogen that was preventable and curable. These results are even more amazing considering that the attack's delivery system was very precise- the targets' names were literally all over it.

**What the Attack Could Teach the Cartel about Fear** Fear is a difficult quality to measure and may be impossible to accurately quantify. Furthermore, contradictory reports have been written about the relative amount of fear caused by the 2001 anthrax attacks. One variable that skews the degree of fear caused by the anthrax attack is its

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<sup>55</sup> Douglas M. Stetson and Heather L.W. Noell, "Worried Well: State of Research, Proposed Metrics, Promising Modeling Directions, and Requirements for Experimentation," [http://www.dodccrp.org/events/12th\\_ICCRTS/Abstracts/146.pdf](http://www.dodccrp.org/events/12th_ICCRTS/Abstracts/146.pdf) (accessed June 4, 2010).

<sup>56</sup> Kathryn Balint, "Online Pharmacies Flooded with Antibiotic Orders," *The San Diego Union Tribune*, October 13, 2001, [http://legacy.signonsandiego.com/news/nation/terror/20011013-9999\\_1n13cipro.html](http://legacy.signonsandiego.com/news/nation/terror/20011013-9999_1n13cipro.html) (accessed June 4, 2010).

<sup>57</sup> Johnstone, *Bioterror*, 11.

temporal proximity to the 9/11 attacks. Some experts have relied on figures to argue that the American public was surprisingly calm during the anthrax attack. Meanwhile, other experts have shown figures that many Americans took extreme safety precautions out of fear of already being infected or possibly becoming infected.

What must not be overlooked, however, is that these attacks were somewhat primitive and inefficient. Only five people died and twenty-two infected. Additionally, it is unknown whether these attacks were conducted to scare the public or if causing fear was even a goal. Even when adding the number of people who were exposed to the anthrax to the numbers of infected and killed, the result is still a miniscule percent of the population. If an American in late 2001 or early 2002 were to calculate his chances of becoming infected based on the numbers already infected, then he would know that he had very little to worry about. However, compared to the risk of infection, a very disproportionate amount of people were afraid of infection and took precautions based on that fear.

The delivery system used in the 2001 attack did not realize the potential inherent in any biological attack to cause fear and panic on a national scale. As mentioned before, however, no one knows whether fear was a primary purpose of the attack. Future attackers could build on the 2001 attack and take steps that would cause many more people to feel a greater amount of fear. Those steps could involve using a transmissible or more infective agent and manipulating the media through constantly communicating misleading messages and future plans for more attacks.

The lesson that drug cartels could take from the attack is that multiple phases should occur to amplify the fear exponentially. Multiple phases could be used to deceive



the public into thinking that multiple groups are involved in the attack, increase the random nature of the attack, and keep the population wondering when the attack will end. These points would all increase the sense of the unknown. Part of the fear from the anthrax attacks was caused by the unknown. The attacker was unknown. Was it the same people responsible for 9/11? Was it someone else? Was it a group? Was it a lone person? The intent was not revealed. Why is this happening? What will make it stop? The scale of the attack was unknown; how many letters were sent? Since the letters were not discovered all at once but one at a time, the duration of the attack was unknown; how much longer will letters be sent? The power of the unknown affected the United States much more than the tangible effects of the attack.

### **Fatalities and Casualties**

The lethality of the attacks is the most tangible effect and the easiest to measure. Five people were killed, all by inhalation anthrax.<sup>58</sup> Twenty-two were infected, half by cutaneous anthrax and half by inhalation anthrax.<sup>59</sup> That amounts to a 45% mortality rate for inhalation anthrax and a 23% overall mortality rate for the attack. Thirty-one people tested positive for exposure.<sup>60</sup> Two of the dead, Kathy Nguyen and Otilie Lundgren, never even came close to the areas where the anthrax letters had been.<sup>61</sup> The anthrax came to them instead, by spores that were shipped to them on cross contaminated mail. Although only four letters were found at the NBC News and New York Post offices in

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<sup>58</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 2.

<sup>59</sup> Ibid.

<sup>60</sup> Ibid., 3.

<sup>61</sup> Cordesman, *Challenge of Biological Terrorism*, 19; Cole, *Anthrax Letters*, 104-109.

New York City and the U.S. Capitol in Washington, D.C., it is officially believed that three more were mailed to the ABC News and CBS News offices in New York City and the AMI building in Boca Raton, Florida. That makes seven envelopes mailed. These letters together contained a quarter ounce of anthrax.<sup>62</sup> The equivalent of two tablespoons of anthrax endangered 30,000 people, exposed thirty-one people, infected twenty-two, and killed five.<sup>63</sup>

All of these figures represent different perspectives. Some people may think that five dead is not that bad. Others may think that 30,000 people whose lives were jeopardized by two tablespoons of powder is inconceivable. Former Senator Bob Graham and Chairman of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism has stated that attacking a large city with two to three pounds of anthrax would kill more people than the number of Americans who died in World War II.<sup>64</sup> Of course, this depends on the delivery system. Some experts believe that one anthrax spore could kill a person.<sup>65</sup> In light of this, some may think that the country is lucky that the attack depended on such an inefficient delivery system as envelopes and the postal system, which only killed five people.

If a Mexican narco-terrorist group wanted to launch a bioattack on the United States for the purpose of killing large numbers of people, then it is unlikely that it would

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<sup>62</sup> U.S. Department of Health and Human Services, National Institute of Allergy and Infectious Diseases, *NIAID IDs and Policy Digest 10/28/08-10/31/08 AM*, by Judith Miller, "City Journal: Bioterrorism's Deadly Math/ Despite billions spent, we're not yet ready for a big attack," 12, [https://www.opensource.gov/portal/server.pt/gateway/PTARGS\\_0\\_0\\_200\\_203\\_121123\\_43/content/Display/9979272/FBS20081031540681.pdf](https://www.opensource.gov/portal/server.pt/gateway/PTARGS_0_0_200_203_121123_43/content/Display/9979272/FBS20081031540681.pdf) (accessed through opensource.gov on June 4, 2010).

<sup>63</sup> Senator Bob Graham, "Preventing a Greater Threat," *New York Times*, November 18, 2008, [http://www.nytimes.com/2008/12/18/opinion/18iht-edgraham.1.18791453.html?\\_r=2](http://www.nytimes.com/2008/12/18/opinion/18iht-edgraham.1.18791453.html?_r=2) (accessed on June 4, 2010).

<sup>64</sup> Senator Bob Graham, "Prepare for an Attack," *Miami Herald*, December 6, 2009, <http://www.miamiherald.com/2009/12/06/1366865/prepare-for-an-attack.html> (accessed on June 4, 2010).

<sup>65</sup> Darin Steele, interview by author, Washington, D.C., April 22, 2010.

emulate the delivery system or use the same agent as the 2001 attack. The narco-terrorists would prefer a more effective delivery system that would spread the agent to a larger number of people or would kill more who were exposed. Additionally, they would also choose a system that gave the victims less warning. In the 2001 attacks many of the victims knew that they were in danger once they opened the envelopes and saw the white powder on a threat letter. Such a warning cut down on the numbers of people killed and infected.

Experts and those involved with the case have almost unanimously agreed that a highly skilled scientist with specialized equipment created the anthrax used in the attacks. A narco-terrorist group seeking to achieve a high body count would view the five fatalities of the 2001 attack as a waste of resources and expertise. A group looking for a high death toll would want a better return on its investment. Thus, it would look for a deadlier agent or one that is easier to manufacture.

### **Government Costs and Economic Damage**

According to the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, \$50 billion has been spent on bioterrorism by the U.S. government since 2001.<sup>66</sup> A Center for Disease Control (CDC) program to fund bioterrorism preparedness and response capabilities in each state has twenty times the funding that it did before the 2001 attacks.<sup>67</sup> Rutgers professor and author of *The Anthrax Letters*, Leonard Cole, estimates that the anthrax attacks caused \$6 billion in

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<sup>66</sup> *World at Risk*, 25.

<sup>67</sup> U.S. Government Accountability Office, summary of *Bioterrorism: Information on Jurisdictions' Expenditure and Reported Obligation of Program Funds*, <http://gao.gov/products/GAO-05-239> (accessed June 4, 2010).

economic damage.<sup>68</sup> The 2001 attacks damaged the U.S. government and national finances in several ways. The government had to spend money on decontaminating all of the buildings that the letters passed through, creating contingencies to keep the government functioning in spite of closed down facilities and limited capabilities, investigating the attack, developing countermeasures against the attack, and defending against future bioterrorism. Additionally, the United States lost revenue from closed down postal facilities, less mail sent, and people missing work. The tallying of the economic damages of the anthrax attacks to the United States may not be exhaustive but it is thorough enough to provide an accurate picture of the financial toll. From that picture a detailed analysis can show the consequences of a well funded and coordinated attack that is designed exclusively or primarily to force the government to spend on decontamination and defense against another attack. Such an attack would further tax the American public and divert funds from important programs.

**Decontamination** The anthrax letters contaminated thirty-five postal facilities and commercial mailrooms and seven Capitol Hill Buildings.<sup>69</sup> The judicial and legislative branches of the U.S. government were completely shut down for a short period of time and partially incapacitated for a number of years. Total decontamination of federal buildings took three years and cost more than \$300 million.<sup>70</sup> Fifteen federal and local agencies were involved in the Capitol decontamination.<sup>71</sup> The Environmental

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<sup>68</sup> *World at Risk*, 8.

<sup>69</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 3.

<sup>70</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 13; Senator Bob Graham and Senator Jim Talent, "Lessons Learned from the Anthrax Attacks," *Washington Times*, July 30, 2009, <http://www.washingtontimes.com/news/2009/jul/30/lessons-learned-from-the-anthrax-letters/> (accessed June 4, 2010).

Protection Agency (EPA) alone spent \$27 million on cleaning up the Capitol Hill buildings.<sup>72</sup>

Anthrax is a very effective contaminant that can deny access to large areas for long periods and damage buildings. This is because anthrax is a very durable bacteria that can survive in harsh conditions. Most other agents quickly destabilize when placed in a foreign environment. Anthrax, however, can settle into almost any environment and wait to infect a host for years. Without decontamination, spores of anthrax could remain in a Capitol Hill building for decades until re-aerosolized by some physical disturbance after which they could infect a staffer or member of Congress. Several years and hundreds of millions of dollars were spent undoing the damage caused by just a fraction of a gram of anthrax that spilled out of a few envelopes. The National Counterterrorism Center (NCTC) stated that cleaning up two to three pounds of anthrax could cost \$1.8 trillion.<sup>73</sup> Lawrence Wein, a Stanford University business school professor, estimated that it would take 314 years and \$20 billion to decontaminate a large-scale aerosolized anthrax attack on New York City if conventional cleanup techniques were used.<sup>74</sup>

**Postal Costs and BioWatch** In terms of contamination and fatalities, the United States Postal Service (U.S.P.S.) was the agency that was the hardest hit by the anthrax attacks. In addition to the cleanup costs, the U.S.P.S.'s revenue for the period between

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<sup>71</sup> U.S. Environmental Protection Agency, Region 3 Philadelphia, Pennsylvania, *Federal On-scene Coordinator's Report for the Capitol Hill Site Washington, DC*, 18-19, <http://www.epaosc.org/sites/DCN000305703/files/osc%20report.pdf> (accessed on June 4, 2010).

<sup>72</sup> U.S. Government Accountability Office, summary of *Capitol Hill Anthrax Incident: EPA's Cleanup Was Successful; Opportunities Exist to Enhance Contract Oversight*, <http://gao.gov/products/GAO-03-686>.

<sup>73</sup> Graham, "Prepare for an Attack."

<sup>74</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 19.

September 8, 2001 and November 30, 2001 was \$876 million less than expected.<sup>75</sup> To prevent further attacks, the U.S.P.S. spent \$74.7 million from November 2001 to April 2008 on irradiating D.C. area federal mail.<sup>76</sup> Since then, mail irradiation procedures have increased mail delivery times. Additionally, the U.S.P.S. spent \$375 million in 2005 to install 1373 Biohazard Detection Systems in 282 Postal Sorting and Distributions Centers throughout the country.<sup>77</sup>

In addition to the money spent by the U.S.P.S. on biological sensors, the Department of Homeland Security spent \$400 million on sensors for the BioWatch program from 2003 to 2008.<sup>78</sup> The BioWatch program is a network of biological air samplers set up in strategic points of the major U.S. cities. The air samplers contain filters that are removed daily and taken to be analyzed for the presence of specific airborne pathogens. Due to the manual removal and analysis of these filters, detection of a bioattack agent could take at least thirty-six hours.<sup>79</sup>

**Biological Countermeasures and Biodefense Labs** In the event that there is no sufficient warning of a biological attack, countermeasures need to be implemented. One countermeasure is an amount of vaccines capable of protecting the U.S. population against infection. Since many different pathogens can be used in a biological attack, it is important to have vaccines for as many pathogens as possible. One of those pathogens is

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<sup>75</sup> U.S. Government Accountability Office, *U.S. Postal Service: Deteriorating Financial Outlook Increases Need for Transformation*, 8, <http://www.gao.gov/new.items/d02355.pdf> (accessed June 4, 2010).

<sup>76</sup> U.S. Government Accountability Office, summary of *United States Postal Service: Information on the Irradiation of Federal Mail in the Washington, D.C., Area*, <http://gao.gov/products/GAO-08-938R> (accessed June 4, 2010).

<sup>77</sup> Anne L. Clunan, Peter R. Lavoy, and Susan B. Martin, ed. *Terrorism, War, or Disease?* (Stanford: Stanford University Press, 2008), 32.

<sup>78</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 17.

<sup>79</sup> Ibid.

smallpox. Many experts fear the use of smallpox as a bioweapon because of its horrendous physical effects and because much of today's population is vulnerable since smallpox vaccinations ceased years ago. As a result of this concern, the U.S. government increased the amount of smallpox vaccine available to Americans. After 9/11 and the anthrax attacks, the number of doses grew from 90,000 to 300 million at a cost of over \$1 billion.<sup>80</sup>

In addition to the smallpox vaccine initiative, the U.S. government enacted Project BioShield in 2004 as a program responsible for national medical countermeasures against a biological attack. Project BioShield is responsible for adding therapeutic, preventative, and diagnostic medical equipment and medication to the Strategic National Stockpile through research, development, and acquisitions. The Strategic National Stockpile is a medical supply designed to reach all Americans in the event of a bioattack.<sup>81</sup> In 2003, Congress appropriated \$5.6 billion for the BioShield Special Reserve Fund.<sup>82</sup> According to the 2010 Prevention of WMD Proliferation and Terrorism Report Card, however, the cost to develop medical countermeasures to priority threats is \$3.4 billion per year over the next five years. Not only has Congress only appropriated a tenth of that for fiscal year 2010, but both Congress and the Administration have been

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<sup>80</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 14.

<sup>81</sup> *Ibid.*, 17.

<sup>82</sup> U.S. Department of Health and Human Services, *Project Bioshield Annual Report to Congress: August 2007 through December 2008*, 1, <https://www.medicalcountermeasures.gov/BARDA/documents/bioshieldannualreport2008.pdf> (accessed June 4, 2010).

caught attempting to raid the BioShield Strategic Reserve Fund for non-national security programs.<sup>83</sup>

To meet the increased demand for these countermeasures additional biodefense labs must be built. The number of Biosafety Level 4 (BSL-4 labs: labs that contain and research the world's most dangerous pathogens, thus employ tight security and meticulous safeguards against exposure or accidents) has grown from five before 2001 to an estimated fifteen by 2012.<sup>84</sup> One example is the DIIS's National Biodefense Analysis and Countermeasures Center at Ft. Detrick in Maryland, which was built at the cost of \$150 million to be the lead research facility for national biodefense.<sup>85</sup> The number of BSL-3 labs (labs that handle dangerous pathogens that are not as deadly as BSL-4 pathogens, since they can often be treated or vaccinated against.) is unknown but it has grown tremendously since 9/11. The Government Accountability Office (GAO) estimates that at least 15,000 scientists and technicians now work in BSL-3 and BSL-4 labs.<sup>86</sup>

Inside all of these labs, biodefense research programs must be funded. Between 2001 and 2008, the National Institutes of Health (NIH) raised their biological weapon research budget from \$52 million to \$1.6 billion. Over the same period of time, the

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<sup>83</sup> U.S. Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, *Prevention of WMD Proliferation and Terrorism Report Card*, 6, <http://www.preventwmd.gov/static/docs/report-card.pdf> (accessed June 4, 2010).

<sup>84</sup> *World at Risk*, 25.

<sup>85</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 14.

<sup>86</sup> *Ibid.*, 16.



Department of Defense (DOD) doubled its biodefense research funding to \$1 billion. Such research included genomic research into the most dangerous pathogens.<sup>87</sup>

**The Amerithrax Case** Another significant cost to the U.S. government was the FBI/Postal Inspection Service investigation into the attack, called the Amerithrax case. Three noteworthy cost components of the investigation that can be derived include the investigators' salaries, Steven Hatfill's settlement amount, and developing the new forensic technology.

A simple estimate can be conducted to discover the cost of paying the investigators' salaries over the eight years of the FBI's Amerithrax investigation, once several figures are provided. The FBI's Amerithrax squad usually consisted of between 24 and 30 special agents.<sup>88</sup> In the FBI, the non-supervisory agent holds a Government Scale (GS) pay position between a GS-10 and GS-13. In addition to their base pay, special agents earn a 25% Law Enforcement Availability Pay (LEAP) bonus. The Washington, D.C. cost of living allowance increases each year. Therefore, the salaries have increased each year over the span of the eight year investigation (for calculation purposes only the span between 2002 and 2009 is included since the investigation started so late in 2001 and was winding down in 2009). These pay figures can all be found on the U.S. Office of Personnel Management "Salary Table" websites. By taking the average amount that each agent earned each year over the span of the eight-year investigation and setting the average number of agents at 27, the investigator salary cost of the investigation is estimated at \$16,706,250. According to the Bureau of Labor

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<sup>87</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 13.

<sup>88</sup> Darin Steele, interview by author, Washington, D.C., April 22, 2010.

Statistics, benefits add approximately 30.4% to the average U.S. employee's salary.<sup>89</sup>

The 30.4% benefit calculation boosts the salary cost to \$21,784,950.

The next cost represents one of the biggest black eyes in FBI history. Steven Hatfill was a bioweapons scientist who studied medicine in Rhodesia and South Africa and worked at several places, including Oxford University, the National Institutes of Health (NIH), and the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID).<sup>90</sup> Soon after the Amerithrax investigation began, Hatfill became a person of interest to the case. As a result, Hatfill was heavily scrutinized by the media, lost his job with defense contractor, SAIC, and could not find additional employment.<sup>91</sup> After several years, however, the FBI could find no evidence to prove that he was responsible for the anthrax attack. In 2003, Hatfill sued the Department of Justice.<sup>92</sup> In 2008, the Department of Justice paid Hatfill \$5.85 million to drop the lawsuit.<sup>93</sup>

The Amerithrax case was a new type of criminal investigation. No investigation had ever attempted to trace a biological agent back to its source. Due to the new nature of the case, the investigation had to follow a learning curve. The FBI had to enlist the help of the best genome researchers in the United States. These scientists created new technologies and groundbreaking techniques to help identify exactly where the anthrax came from. It is estimated that the development of this technology cost the FBI

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<sup>89</sup> U.S. Department of Labor, Bureau of Labor Statistics, "Employer Costs for Employee Compensation," <http://www.bls.gov/news.release/cecc.nr0.htm> (accessed on June 14, 2010).

<sup>90</sup> Cole, *Anthrax Letters, 192-195*.

<sup>91</sup> *Ibid.*

<sup>92</sup> Carrie Johnson, "U.S. Settles With Scientist Named in Anthrax Cases," *Washington Post*, June 28, 2008, <http://www.washingtonpost.com/wp-dyn/content/story/2008/06/27/ST2008062702767.html> (accessed June 7, 2010).

<sup>93</sup> *Ibid.*

approximately \$10 million.<sup>94</sup> In addition, the FBI is paying for an independent review of the scientific techniques that were used in the investigation. The National Academies will be responsible for vetting the methods used to trace the anthrax back to a flask that was under the supervision of USAMRIID scientist Dr. Bruce Ivins. This study will cost the FBI \$879,550.<sup>95</sup>

The above-mentioned figures of the Amerithrax case add up to \$38,514,500. Several figures, however, were not included in this estimate because they are difficult to ascertain. Such figures include:

- the salary costs of the support personnel involved with the case;
- the amounts paid for the work of investigators who were peripherally involved in the case and whose time was not fully dedicated to the investigation;
- overtime costs;
- and travel and lodging expenses for searches and interviews across the world.

The addition of these and other figures could possibly double the cost of what is already the most expensive case in the history of the FBI.<sup>96</sup>

**Nothing to Show for the Money** In spite of all of the money spent, the United States is no safer from a biological attack than it was before the 2001 anthrax attacks. Many of the resources have been used to prevent the same attack from happening. A

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<sup>94</sup> Catherine Herridge, "'Anthrax Killer' Suspect Had Sorority Obsession," Foxnews.com, <http://www.foxnews.com/story/0,2933,396823,00.html> (accessed June 7, 2010).

<sup>95</sup> Yudhijit Bhattacharjee, "FBI Anthrax Investigation under Scientific Review," *ScienceInsider*, May 6, 2009, <http://news.sciencemag.org/scienceinsider/2009/05/fbi-anthrax-inv.html> (accessed June 7, 2010).

<sup>96</sup> Herridge, "'Anthrax Killer' Suspect".

drug cartel could launch a much deadlier attack with relative ease. It would not be difficult to exploit the existing vulnerabilities.

The Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism states that, in spite of the money that has been spent, the United States has no deterrence against a biological attack because none of the key links are in place to mitigate the effects of a biological weapon. In fact, the Commission gave the government the grade of an F for its preparedness for a biological attack.<sup>97</sup>

The cost to launch the 2001 attack is hard to estimate since investigators believe that the materials, equipment, and expertise to develop the anthrax were already in place. It has been estimated, however, that acquiring the equipment and material needed for a laboratory to develop a biological weapon for a large scale attack would cost between \$200,000 and \$2 million.<sup>98</sup> The U.S. government spent \$50 billion to defend against a \$2 million attack. Even if this attack estimate is off by a factor of ten, then the cost to conduct the attack is still enormously cheaper than the cost to contain the infection, repair the damages, and prevent the next attack.

Another factor that must be elucidated is that all of this money was spent to resolve an attack with anthrax, which is a non-transmissible disease. How much would be spent if the attack used agents like plague, tularemia, or Q fever, that can be spread from person to person. The cost of patient treatment, quarantine efforts, and lost wages would have risen tremendously.

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<sup>97</sup> *WMD Report Card*, 6.

<sup>98</sup> Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *First Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction: I. Assessing the Threat*, 23, <http://www.rand.org/nsrd/terrpanel/terror.pdf> (accessed on June 4, 2010).

The United States could not continue to spend so extravagantly to defend against multiple biological attacks. Government response to another similar attack, much less a more destructive attack, would have deleterious effects on the U.S. government's finances and the nation's economy. If a drug cartel wanted to launch a biological attack to hurt the United States financially, then the 2001 anthrax attacks demonstrate that a bioattack would be very effective. Although some of the costs would not be repeated, such as money that was spent building up biodefense labs and other infrastructure, an attack of larger scale could cost the United States much more money in lost wages, victim treatment, hospital costs, increased biodefense efforts, and decontamination. At \$2 million per attack, a drug cartel could bankrupt the United States.

<b>COSTS</b>	<b>AMOUNT</b>
<b>Total Biodefense Cost since the 2001 Anthrax Attack</b>	\$50 billion
<ul style="list-style-type: none"> <li>• Total Anthrax Attack Economic Damage <ul style="list-style-type: none"> <li>○ Federal Bldg Decontamination <ul style="list-style-type: none"> <li>▪ EPA Cost to Decontaminate Capitol</li> </ul> </li> <li>○ Lost Postal Revenue 9/01-11/01</li> <li>○ Amerithrax Case</li> </ul> </li> </ul>	\$6 billion \$300 million \$27 million \$876 million \$38,514,500
• Postal Biohazard Detection Systems	\$375 million
• DHS BioWatch 2003-2008	\$400 million
• Smallpox Vaccine Expansion	\$1 billion
• BioShield 2003 Appropriation	\$5.6 billion
• Nat'l Biodefense Analysis and Countermeasures Center	\$150 million
• 2008 NIH Bioweapon Research Budget	\$1.6 billion
• 2008 DOD Bioweapon Research Budget	\$1 billion
<b>Cost Range of Future Bioattack</b>	\$200,000- \$2 million

**Table 1. Breakdown of Biodefense Cost Compared to Possible Cost of Future Bioattack**

Table 1 enumerates some of the costs associated with mitigating the effects of the 2001 anthrax attack and preventing a similar future attack from happening. The table uses the Commission to Prevent WMD Proliferation and Terrorism's overall biodefense cost figure of \$50 billion. The remaining costs are not exhaustive and do not represent all costs related to the anthrax recovery efforts or U.S. biodefense programs. This table also represents the disparity in spending between a non-state actor's attempt to launch bioattack against the United States and the U.S. government's efforts to defend against such an attack. Respectively, the disparity amounts to \$2 million versus \$50 billion.

A successful large-scale attack would be very effective in demoralizing the United States since so much money has been wasted in an attempt to prevent and mitigate another biological attack. Politicians and high-level bureaucrats would question previous actions to safeguard the United States, become paralyzed from taking steps in any direction, and the public would lose faith in their elected officials.

In spite of the U.S. government spending approximately \$50 billion to mitigate the damage caused by the 2001 anthrax attacks and defend Americans against a future attack, gaping vulnerabilities still exist. Compared to the money spent, the United States has little to show for it. The number of biodefense labs has greatly increased and the funding for biodefense research programs has skyrocketed, but no medical treatments or vaccines against numerous biological agents have been produced. Medications and vaccines are the primary defense against pathogens. If no vaccines have been created and mass-produced, then no progress in biodefense has been made. In some instances the United States is now more vulnerable than it was before 2001.<sup>99</sup> For example, the Commission on the Prevention of Weapons of Mass Destruction Proliferation and

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<sup>99</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 13.

Terrorism states that financial and intellectual barriers to developing a biowapon are lowering quickly.<sup>100</sup> A moderately well-funded and capable group with intent, such as a narco-terrorist organization, could easily exploit these factors and cause the United States agony on a national scale.

## CONCLUSION

The anthrax attacks had a mixed impact on the United States in terms of the measured effects of fatalities and casualties, fear, and government costs and economic damage. Although the deaths and casualties from this attack are tragic, statistically the death toll had absolutely no impact. Very few people were killed or injured and no public figures or national leaders were physically affected. If the goal of this attack was to amass a large bodycount then it failed. Narco-terrorists would probably use a transmissible and more infectious pathogen and a different delivery system to infect and kill a large number of people.

A small to moderate amount of fear was caused by this attack. National-scale panic and paralysis was not achieved. In spite of this, a disproportionately large amount of fear was caused compared to the number of fatalities and casualties. The level of fear was also high relative to the odds of someone becoming infected. Narco-terrorists could conduct this attack on a larger scale if they desired to cause more fear but were not concerned about inflicting a large death toll.

The economic damage from the anthrax attacks was devastating by any standard. Anthrax is the perfect pathogen to contaminate a large area. If a narco-terrorist group

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<sup>100</sup> *WMD Report Card*, 1.

wanted to contaminate a large city, deny access to its residents, and halt all government and economic functions, then it would follow the 2001 anthrax attacks closely.



## **CHAPTER 3**

### **Now the Sicarios are in Control**

#### **HISTORY**

The United States is the world's largest consumer of cocaine and several other illegal drugs.<sup>101</sup> Thus, operations and routes shipping those drugs to the United States are very profitable. The majority of the cocaine consumed in the United States is grown in Colombia. In the past Colombian drug cartels shipped drugs into the United States via boats and planes across the Caribbean, land routes through Mexico, and several other smaller means. In the 1980's, the local gangs who controlled the Mexican land routes used their leverage to gain wealth and business partnerships from the Colombians. With the influx of billions of dollars from Colombian cocaine, the gangs in the Mexican province, Sinaloa, began fighting each other over control of the lucrative routes. The Sinaloan gangs were then forced to combat criminal organizations from other parts of Mexico that were encroaching on their territory.<sup>102</sup>

The U.S.-backed counterdrug efforts of the past thirty years weakened the power and capabilities of the Colombian drug organizations and reduced the profitability of the

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<sup>101</sup> Central Intelligence Agency, "The World Fact Book, Field Listing: Illicit Drugs," <https://www.cia.gov/library/publications/the-world-factbook/fields/2086.html> (accessed on June 16, 2010).

<sup>102</sup> John Dinges, "Opinion: Mexico's Staggering Drug Wars," *Globalpost*, March 3, 2009, <http://www.globalpost.com/dispatch/worldview/090303/opinion-mexicos-staggering-drug-wars> (accessed June 5, 2010).

air and sea routes into Florida. These counterdrug efforts coupled with border-disintegrating effects of the North America Free Trade Agreement (NAFTA) made the land route through Mexico a more feasible way to ship drugs into the United States. As a result, 90% of the cocaine in the United States now comes through Mexico, making the shipping routes and the territory around them more valuable.<sup>103</sup>

### **RATIONAL ACTING CORPORATIONS**

In spite of the bloody way that they conduct business, rational people run these cartels. Most believe that cartel bosses and their employees are mindless psychopaths that are committing senseless acts of violence. This impression is the result of confusing rationality with morality. The cartel leaders and members are not moral men, they are criminals. The cartels are criminal corporations. The purpose of these corporations is to acquire wealth. The actions committed by members of these corporations is to put these corporations in a position to acquire wealth and at least keep it in that position if not improve its position. Since cartel members achieve their objectives by coming up with calculated solutions to strategic problems, they are rational people as defined by the rational actor model. According to the rational actor model, a rational actor makes decisions based on “behavior motivated by a conscious calculation of advantages, a calculation that in turn is based on an explicit and internally consistent value system.”<sup>104</sup>

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<sup>103</sup> Steve Fainaru and William Booth, “As Mexico Battles Cartels, The Army Becomes the Law,” *Washington Post*, April 2, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/04/01/AR2009040104335.html?nav=emailpage> (accessed June 5, 2010).

<sup>104</sup> Graham T. Allison and Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis*, 2nd ed. (New York: Longman, 1999), 15.

The rational actor model not only mandates that there must be a purpose behind one's choice, but that consistency is displayed between actions done by the same actor.<sup>105</sup> This rational consistency explains why the cartels are responsible for so many deaths.

There are four core concepts of rational action. The first concept is that a rational actor ranks his potential actions according to his interests and objectives. The next concept is that the actor must choose from a series of alternatives during a certain situation. The third concept states that each of these alternatives has specific consequences. Finally, the rational choice results from choosing the alternative whose consequences rank highest compared to the actor's set of interests and objectives.<sup>106</sup>

The four concepts can be expressed in terms of the cartel leader. A cartel head is a criminal CEO. His responsibility is to increase the cartel's profit by increasing revenue and decreasing cost. The boss is faced with many different ways of doing this. However, each of these ways have negative consequences. Doing nothing could be either beneficial or detrimental, depending on the situation. In some manner, the cartel head considers his responsibilities, remembers his goals and objectives, and reviews the actions that he has available to him. While reviewing the actions, he compares the effectiveness of each in terms of accomplishing his goals to the negative consequences that offset the benefit. In the end, the cartel head picks the action where the most benefit remains from what has been subtracted by the negative consequences.

On a certain level, this calculation occurs every time a cartel head decides to display the headless corpses of five of his rivals in a playground or kills the brother of a rival cartel head in retaliation for the murder of his own brother. These acts, while

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<sup>105</sup> Allison and Zelikow, *Essence of Decision*, 17.

<sup>106</sup> Ibid., 18.

psychopathic, are motivated by a calculation that a show of force is necessary to keep potential challengers in their place.

In addition to rationality, strategic actions by drug cartels are influenced by other forces indicative of the organizational process model and the bureaucratic politics model.<sup>107</sup> Like bureaucracies and other large organizations, the head of a cartel usually has to act within the standard operating procedures of his cartel.<sup>108</sup> The cartel leader has a wide range of discretion, but he must contend with the cartel as an institution that has its own pattern of predictable behavior. Additionally, the direction that a cartel has taken may be the result of a struggle between the leader's lieutenants. This is similar to policies that are created from the pushing and pulling that takes place between government agencies.<sup>109</sup> If the struggle is too explosive, then the cartel could divide into warring factions. In the end, a cartel leader wields an amazing amount of power over an organization that, paradoxically, acts on its own. Besides the results of leader directives, cartel actions can also be the consequences of the machinations inside of the cartel or an action that is done in accordance with the standard operating procedure of the cartel.

In addition to the constraints of other models, the rational actor model states that the rationality of the actor "refers to consistent, value-maximizing choice within specified constraints."<sup>110</sup> One of the real world constraints that members of the cartels have to contend with is that their business is illegal. There are no unions to protect workers' rights, no lawyers to settle financial disputes, and no government regulation that

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<sup>107</sup> Marc A. Genest, *Conflict and Cooperation: Evolving Theories of International Relations*, 2<sup>nd</sup> ed. (Belmont, CA: Wadsworth/Thomson, 2004), 447.

<sup>108</sup> *Ibid.*, 445.

<sup>109</sup> *Ibid.*, 447.

<sup>110</sup> Allison and Zelikow, *Essence of Decision*, 18.

corporations must abide by. Additionally, certain types of people with certain psychological profiles are drawn to this business. Certain types of actions are most effective against these types of people. Almost always these actions must display force and power, even when acting defensively. As a result, the actors in this arena are constrained to violent action. The only alternatives are to modulate the level of violence. That level of violence generally trends higher to keep acts from becoming forgettable.

When one models drug cartels after legitimate corporations, then alternatives to violence that increase profit can be imagined. For instance, a corporation can form strategic alliances and make its product more efficiently. A corporation can also cut deals with businesses upstream and downstream in the manufacturing and distribution processes.

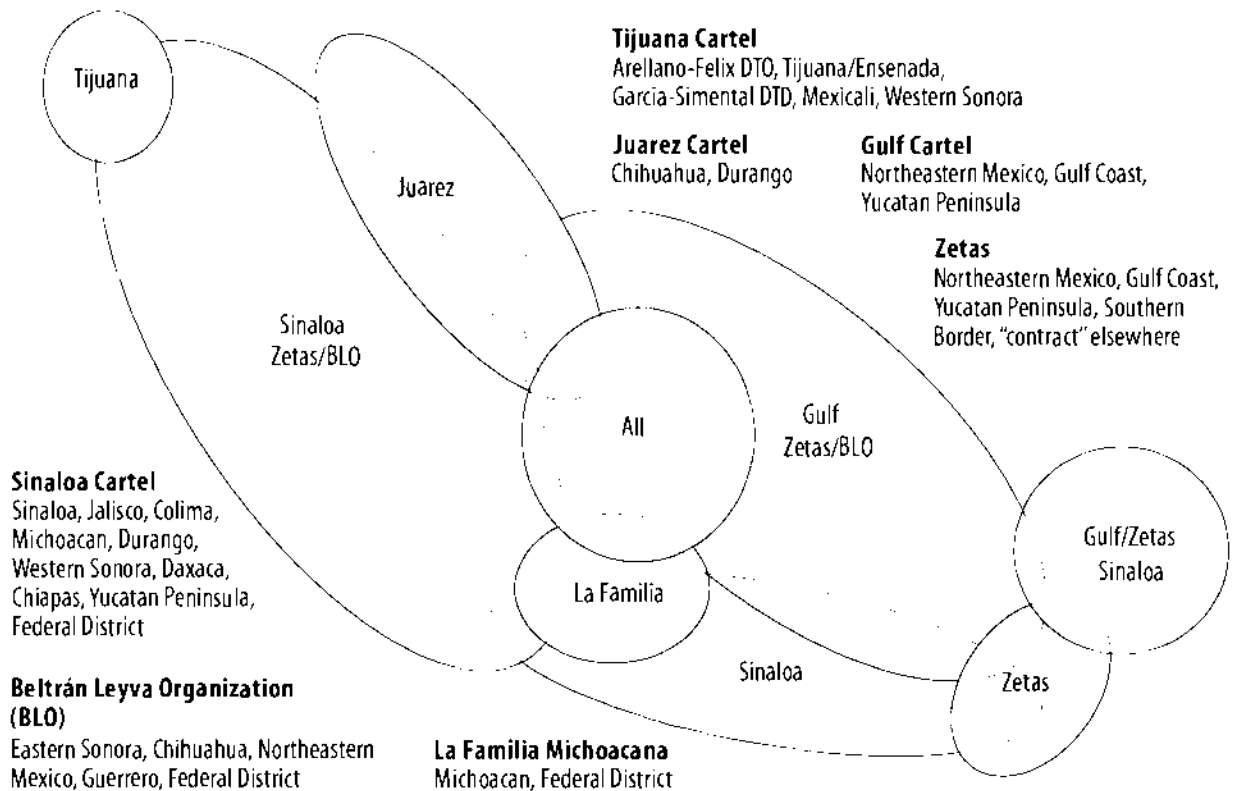
The problem in the drug smuggling business, however, is that it all depends on the routes. Whoever controls the routes makes the money. There are only a finite number of available routes since U.S. counterdrug efforts have reduced the effectiveness of large scale air and sea smuggling. Thus, the primary way to make money in the drug smuggling business is to acquire high traffic routes and territory close to the U.S. border and the primary way to expand revenue is to take routes from other drug smugglers.

Once someone has shed enough blood to acquire territory and defend it, then he could engage in fundamental business practices. He could try to get more money from the Colombian suppliers and pay less to the American distributors, streamline his business model, or change the purity of the drugs. These actions, however, are meaningless if one does not control any territory or has not taken the steps to protect the territory under his control.

In addition to all of the other constraints present in a criminal enterprise environment, the Mexican cartels are also constrained by the fact that they can only make enough money to sustain their massive organizational structures by overly depending upon the routes. In the legitimate world, businesses have constrained moral options and unconstrained operational options. While in the Mexican drug trafficking world, businesses have unconstrained moral options but constrained operational options. Therefore, leaders and members of the cartels engage in any level of violence in order to gain control of more territory with access to high traffic routes into the United States.

## **CARTEL PROFILES**

The Mexican Cartel landscape is constantly changing. Internal and external pressures cause cartels to break up and multiple cartels to ally into a loose federation or merge completely. Some cartels are weakened so thoroughly by the arrest or murder of their leaders that other cartels will acquire their men, territory, and operations. When a cartel's leader is killed or arrested, then the next person in line takes charge. Often that cartel's leader was killed by the next person in line so that he could take charge. When a new leader emerges, then the profile of that cartel could change completely.



**Figure 8. Mexican Drug Cartel Territories**

Source: U.S. Congressional Research Service, *Mexico's Drug-related Violence*, by June S. Beittel, 7, <http://www.fas.org/sgp/crs/row/R40582.pdf> (accessed June 5, 2010).

Figure 8 shows the distribution of the major cartels throughout Mexico. The distribution represents their base of operations and the smuggling routes that they control. Areas that include more than one cartel or contain overlapping circles indicate that it is disputed territory. Such areas may be fought over because lucrative routes into Mexico or the United States run through them. The fact that all of the circles overlap other circles demonstrates that a certain degree of drug violence is happening throughout Mexico.

## **Sinaloa Cartel**

Presently, the Sinaloa Cartel is the largest of the Mexican cartels and has been called the most powerful drug trafficking organization in the world. The Sinaloa cartel is led by Joaquin Guzman, the most famous of all the cartel leaders. Joaquin Guzman, also known as El Chapo, appeared on Forbes list of richest people in the world. After a two year battle with the Juarez Cartel over lucrative trading routes, it is now believed that the Sinaloa cartel took the territory surrounding Ciudad Juarez from the Juarez cartel.<sup>111</sup>

## **Beltran Leyva Organization**

The Beltran Leyva Organization was allied with the Sinaloa Cartel, until Alfredo Beltran Leyva was arrested in January 2008. The Beltran Leyva Organization believed that Joaquin Guzman provided information that led the Mexican army to Alfredo. In retaliation, it is believed that the Beltran Leyva Organization killed Guzman's son. The Beltran Leyva Organization has an excellent intelligence apparatus that has infiltrated the highest levels of Mexican government and possibly U.S. diplomatic establishments.<sup>112</sup> The Beltran Leyva Organization's position of power and status has risen over the past year due to strategic moves, including allying with another drug trafficking organization, Los Zetas, assassinating important members of the Mexican government, gaining U.S. territory, including a lucrative distribution hub in Chicago, and leveraging its highly

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<sup>111</sup> Alicia A. Caldwell and Mark Stevenson, "Sinaloa takes over Ciudad Juarez," *Huffington Post*, April 9, 2010, [http://www.huffingtonpost.com/2010/04/09/sinaloa-takes-over-ciudad-juarez\\_n\\_531378.html](http://www.huffingtonpost.com/2010/04/09/sinaloa-takes-over-ciudad-juarez_n_531378.html) (accessed June 6, 2010).

<sup>112</sup> Sylvia Longmire, "DTO 101: The Beltran Leyva Organization," Mexico's Drug War, [http://borderviolenceanalysis.typepad.com/mexicos\\_drug\\_war/dto-101-the-beltran-leyva-organization.html](http://borderviolenceanalysis.typepad.com/mexicos_drug_war/dto-101-the-beltran-leyva-organization.html) (accessed June 6, 2010).



placed sources. On December 16, 2009, however, the group's leader, Arturo Beltran Leyva was killed during a battle with Mexican sailors.<sup>113</sup>

### **Gulf Cartel and Los Zetas**

As previously mentioned, the Beltran Leyva Organization is currently allied with Los Zetas against the Sinaloa Cartel. Los Zetas started as a Gulf cartel enforcer group comprised of ex-soldiers trained by U.S. Special Forces to fight against the Mexican cartels. When Gulf cartel head Osiel Cardenas Guillen was extradited to the United States, the Gulf cartel became more of a horizontal network organization led by three of Cardenas Guillen's top lieutenants. Heriberto Lazcano, head of Los Zetas, was one of those lieutenants.<sup>114</sup> Since then, Los Zetas have split from the Gulf cartel, allied with the Beltran Leyva Organization, only to split with it to become an independent cartel, and have now possibly realigned itself with the Gulf Cartel. Los Zetas rely on precision military tactics, extreme violence, and public acts of terror to intimidate rival cartels and to keep the local population in line. In addition to trafficking, Los Zetas have branched out into dealer protection, extortion, and kidnapping.

### **Juarez Cartel**

The current incarnation of the Juarez cartel is the result of the death of Amado Carillo Fuentes, the leader of the cartel during the 1990's. His death caused a power

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<sup>113</sup> "Top Mexican Drug Lord Killed in Fight with Law Enforcement," *Foxnews.com*, December 17, 2009, <http://www.foxnews.com/world/2009/12/17/mexican-drug-lord-killed-fight-law-enforcement/> (accessed June 6, 2010).

<sup>114</sup> Sylvia Longmire, "DTO 101: The Gulf Cartel," Mexico's Drug War, [http://borderviolenceanalysis.typepad.com/mexicos\\_drug\\_war/dto-101-the-gulf-cartel.html](http://borderviolenceanalysis.typepad.com/mexicos_drug_war/dto-101-the-gulf-cartel.html) (accessed June 6, 2010).

vacuum that people within and outside of the organization fought to fill. The Tijuana cartel, which was very strong at the time, acquired much of the Juarez cartel's territory and operations. Once Joaquin Guzman escaped from prison in 2001, many Juarez cartel members joined the Sinaloa cartel, further weakening the Juarez cartel. These defections were a source of peace and war between the two cartels. In 2004, however, current Juarez cartel leader Vicente Carrillo Fuentes killed Guzman's brother due to the belief that Guzman was responsible for the death of Vicente's brother. The two cartels have been battling ever since, with the exception of a truce between 2005 and 2006 that allowed the Sinaloa cartel to start a war against the Gulf cartel.<sup>115</sup> The Sinaloa cartel has possibly defeated the Juarez cartel and recently taken its territory surrounding Ciudad Juarez.

### **Tijuana Cartel**

The Sinaloa cartel is also fighting the Tijuana cartel for control of routes through Baja and into California. Teodoro Garcia Simental, a high-ranking member of the Tijuana cartel recently broke off and formed his own cartel. With the backing of the Sinaloa cartel, Garcia Simental has been fighting a brutal war against the Tijuana cartel. Garcia Simental and several of his lieutenants, however, were arrested in early 2010.

### **La Familia**

La Familia is another example of an emerging cartel. La Familia is very entrepreneurial and represents itself as a semi-legitimate corporation that only hires residents from its home province of Michoacan. La Familia has a horizontal business

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<sup>115</sup> Sylvia Longmire, "DTO 101: Juarez Cartel," Mexico's Drug War, [http://borderviolenceanalysis.typepad.com/mexicos\\_drug\\_war/dto-101-the-juarez-cartel.html](http://borderviolenceanalysis.typepad.com/mexicos_drug_war/dto-101-the-juarez-cartel.html) (accessed June 6, 2010).

structure with offices across Mexico. La Familia also has social and even political motivations. La Familia possibly originated as a group to stop the crime in the Mexican province of Michoacan. It provided help to poor communities that the government could not provide. La Familia posted public service announcements in newspapers promising to build schools. Reports indicate that La Familia has a grassroots following sparked by principles and practices of taking care of its native people and lands.<sup>116</sup> La Familia has a strong hold on Michoacan politics and supports a political agenda that exceeds meeting the financial needs of its operations. La Familia is led by a New Age zealot, Nazario Moreno Gonzales, who is called El Mas Loco. As a result, La Familia's doctrine is very religious to the point of being extremist and Gonzales holds its members to strict religious standards.<sup>117</sup>

## **OPERATIONAL ENVIRONMENT**

The leaders of the Mexican drug trafficking organizations have always had to worry about other organizations and even people in their own organizations, but the Mexican government was never an obstacle. In fact, all levels of government in Mexico were so corrupt that the cartels could count on officials to at least remain oblivious, if not complicit, in their operations. These conditions changed with the election of President Calderon. In 2006, Felipe Calderon became the president of Mexico and soon after

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<sup>116</sup> George W. Grayson, "La Familia: Another Deadly Mexican Syndicate," Foreign Policy Research Institute, <http://www.fpri.org/cnnotes/200901.grayson.lafamilia.html> (accessed June 6, 2010).

<sup>117</sup> Steve Fainaru and William Booth, "A Mexican Cartel's Swift and Grisly Climb," *Washington Post*, June 13, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/06/12/AR2009061203829.html?nav=emailpage&sid=ST2009061204134> (accessed June 6, 2010).

started a major offensive against drug trafficking and drug-based public corruption. President Calderon's policies, including mobilizing 50,000 soldiers and 20,000 federal police officers within Mexico, have disrupted the cartel's business and operational practices.<sup>118</sup> As a result, the cartels' profiles, structures, and practices have become more dynamic and the landscape's rate of change is accelerating. In reaction to the increased pressure, the cartels have attacked each other and government forces with increasing violence. According to the Associated Press 22,700 people have been killed since the beginning of President Calderon's drug offensive.<sup>119</sup> According to the Mexican newspaper *El Universal*, 19,821 were killed in narco-violence between 2005 and 2009.<sup>120</sup>

Year	Deaths
2005	1,573
2006	2,221
2007	2,673
2008	5,630
2009	7,724
TOTAL	19,821

**Table 2. Death Toll of the Mexican Drug War by Year According to *El Universal***  
**Source:** *El Universal*, "Narcoguerra 2009: Todos Peredieron."

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<sup>118</sup> Open Source Center, "Mexico: Four Severed Heads Found Near Monument in Michoacan State," [https://www.opensource.gov/portal/server.pt/gateway/PTARGS\\_0\\_0\\_200\\_203\\_121123\\_43/content/Display/LAP20100331068009?searchKey=833517&rpp=10&index=3](https://www.opensource.gov/portal/server.pt/gateway/PTARGS_0_0_200_203_121123_43/content/Display/LAP20100331068009?searchKey=833517&rpp=10&index=3) (accessed through opensource.gov on June 6, 2010).

<sup>119</sup> Ken Ellingwood, "Mexico Death Toll in Drug War Higher than Previously Reported," *Los Angeles Times*, April 14, 2010, <http://articles.latimes.com/2010/apr/14/world/la-fg-mexico-toll14-2010apr14> (accessed on June 6, 2010).

<sup>120</sup> *El Universal*, "Narcoguerra 2009: Todos Peredieron," <http://www.texasobserver.org/uploads/files/narcoguerra.pdf> (accessed on June 15, 2010).

Table 2 shows that violence related to the drug war has escalated each year. In 2008 and 2009 the deaths increased dramatically. This occurred despite President Calderon's focus on hindering cartel activities starting in 2006, which included mobilizing the Mexican military to fight the cartels, restructuring the police forces throughout the country, and attempting to stamp out government corruption.

Since most of this violence is occurring close to the U.S. border, the United States is concerned about the violence spilling over into the border states. The United States is very supportive of President Calderon's anti-drug stance and has been funding his efforts and sending experts and equipment. In 2007, the United States and Mexico signed the Merida Initiative, in which the United States pledged to send \$1.5 billion in training, equipment, and vehicles to Mexico and Central American countries for the purpose of combating drug trafficking organizations. Mexico will receive over \$1 billion of this money.<sup>121</sup> The U.S. government will continue to support the Mexican government in fighting the Mexican cartels and preventing the drug violence from entering the United States. If the drug war worsens or indications arise that the violence will bleed over into the United States, then the U.S. government will become more involved. If the stability of the Mexican government is threatened and Mexico risks becoming a failed state, then a report by the U.S. Joint Forces Command stated that U.S. military involvement inside of Mexico will be required to protect U.S. national security.<sup>122</sup>

The bottom line is that the cartels are facing more threats from all sides. Increasing violence and pressure will destabilize the situation. Pre-existing constraints on violence will disappear. This may force desperate and drastic measures to be taken by

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<sup>121</sup> U.S. Department of State, "The Merida Initiative."

<sup>122</sup> Dinges, "Opinion: Mexico's Staggering Drug Wars."

the cartels to protect their assets, their organization, their power status, or the lives of the leaders.

### **IS A BIOWEAPON AN OPTION?**

With the situation in Mexico devolving and pressure on the cartels building, the cartels could look for options that would redirect some of that pressure and strengthen their positions. This option would undoubtedly involve a massive amount of violence. The cartels have already deployed squads of fighters against each other and the Mexican military. The cartels are relatively evenly matched, so battling each other has taken a large manpower toll without much gain. Frontal attacks against military positions have been even costlier and netted almost no gain.<sup>123</sup>

To change the nature of the conflict and improve its standing, a cartel may broaden its targets. Besides the Mexican military and other cartels, Mexican civilians and the United States are involved in this conflict. Targeting them could give a cartel the advantage that it desires.

A cartel may also resort to more drastic and sophisticated measures against this broader array of targets. A cartel could decide to send hit squads to indiscriminately kill Mexican or American civilians. A cartel could also decide to plant explosives that target military or civilian populations. Both of these options could involve campaigns that could kill hundreds of people.

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<sup>123</sup> CBSnews.com, "Mexico Drug Gangs Attack Army Garrisons," <http://www.cbsnews.com/stories/2010/04/01/world/main6352799.shtml> (accessed on June 6, 2010).

A cartel could also choose to cause more damage by deploying a weapon of mass destruction (WMD). A WMD would not only kill hundreds or thousands of people, but could cause substantial physical damage and would send a message that would resonate more strongly with the governments. Even if the death toll from a WMD was not much higher than from a conventional explosive, a WMD conveys a point that a conventional explosive does not: that the attacker is extremely sophisticated and has no apprehensions about mass murder. This point will cause a government to hesitate, wonder what else the attacker is capable of, and consider very carefully, and even tentatively, how to respond.

Of all types of WMD, a biological weapon would be the most suitable. A pathogenic agent is easily acquired from nature or an unsecure biological lab. To build a nuclear weapon, a cartel would need to acquire highly enriched uranium. Such a material, or even lower grade plutonium, is extremely rare and heavily protected.<sup>124</sup> If a cartel wanted to build a radiological dispersal device, also known as a dirty bomb, then the radiological material is still difficult to acquire, and the effort required to do so would outweigh the effect of the radiation on the victims. Additionally, it would be much cheaper to acquire the components and build a biological weapon than it would be for a nuclear weapon. Furthermore, a cartel would have an easier time remaining undetected while it acquired bioweapon components, built the bioweapon, and transported it compared to doing the same for a nuclear weapon.

Conversely, a chemical weapon would be the easiest and cheapest of all WMD to build. The problem, however, is that chemical weapons can be the clumsiest to use in the

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<sup>124</sup> Mickey McCarter, "Larsen Calls for Boosts in Bioterror Response," *HS Today*, May 5, 2010, <http://www.hstoday.us/content/view/13148/149/> (accessed on June 6, 2010).

field. A chemical weapon can be hard to control and its effects are not very persistent. Such effects could limit the body count.

A biological weapon can have a cost closer to that of a chemical weapon but the lethality of a nuclear weapon. In addition, a biological weapon is easier to control and the desired effects can be customized to fit the objective. While the only way to modify the damage of a nuclear weapon is by making it bigger or smaller or detonating it at different altitudes, every factor of a biological weapon can be altered, including its delivery method, lethality, target precision, and desired effects. A biological weapon also gives a cartel the greatest chance to remain anonymous if it chooses. A pathogen that is cultivated from some isolated cow pasture is less traceable than a captured fighter or a registered chemical or sampled fissile material.

A biological weapon is the ideal weapon for a cartel that wants to cause mass casualties and cause a government to pause and review its policies. It is cheap and lethal. Relative to the other options, a biological weapon can be selected to produce a specific known effect to accomplish a particular objective.

### **ARE THE CARTELS A BIOWEAPON THREAT?**

Just because a biological weapon is an ideal choice for a specific type of organization, does not necessarily mean the organization would use one. It takes a unique group to be a threat to launch a biological attack. Such a group would need to have the sophistication, ruthlessness, and motivations for conducting a bioattack. Any



one of the Mexican cartels possesses these three requirements, thereby making them all a threat to use a bioweapon against any of their targets.

### **Sophistication**

**Financial Capabilities** When discussing the capabilities needed to conduct a biological attack, three areas are involved: the ability to fund the attack, the ability to cultivate the biological agent and build an effective dispersal device, and the ability to transport the device or dispersal equipment. As stated before, it would cost between \$200,000 and \$2 million to build a facility capable of developing an agent to be used in a large scale attack.<sup>125</sup> As far as having the expertise needed to develop a bioweapon, a studious biology major would suffice.<sup>126</sup> A cartel that did not want to take any chances or possibly wanted a more exotic agent could then employ a Russian scientist who has previously worked in the Soviet bioweapons program. In 2004, a Russian WMD scientist was making approximately \$300 a month.<sup>127</sup> A bioweapon scientist who has a better understanding of his worth may ask for several million dollars. According to these figures, the approximate maximum cost to develop a biological weapon would be \$15 million. Mexican officials estimate that the cartel's average annual operating budget is

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<sup>125</sup> Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *First Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction: I. Assessing the Threat*, 23, <http://www.rand.org/nsrd/terrpanel/terror.pdf> (accessed on June 4, 2010).

<sup>126</sup> Richard Rupert, phone interview by author, April 21, 2010.

<sup>127</sup> John V. Parachini, David E. Mosher, John Baker, Keith Crane, Michael Chase, and Michael Daugherty, *Diversion of Nuclear, Biological, and Chemical Weapons Expertise from the Former Soviet Union: Understanding an Evolving Problem* (Santa Monica, CA: RAND, 2005), 11, [http://www.rand.org/pubs/documented\\_briefings/2005/RAND\\_DB457.pdf](http://www.rand.org/pubs/documented_briefings/2005/RAND_DB457.pdf) (accessed on June 6, 2010).

\$10 billion, more than enough to cover the cost.<sup>128</sup> If Joaquin Guzman, the head of the Sinaloa cartel, wanted to personally pay for the operation, then he could; Forbes estimates that Guzman's worth is over \$1 billion.<sup>129</sup>

**Networking and Infiltration Capabilities** If the attack were to be launched within Mexico, then transportation of the bioweapon would be a non-issue. A cartel has the ability to range freely anywhere inside Mexico. A cartel has only a slightly less ability to roam inside the United States. According to the U.S. Border Patrol, 48 million pedestrians, 90 million private vehicles, and 4.4 million semi-trucks crossed into the United States from Mexico in 2004.<sup>130</sup> The cartels send thousands of tons of drugs in this traffic. The bioweapon's disassembled, innocuous-looking equipment and pathogenic material could be shipped across the border on cartel vehicles that have clean registrations, contain no illegal contents, and are driven by drivers with clean records. Another option is to transport the bioweapon under the border through one of the dozens of cartel tunnels.<sup>131</sup>

Mexican cartels are easily capable of launching a biological attack, to the point that it is almost not an issue for a cartel. In fact, their billions of dollars, international network, and proximity to the United States make them more capable than any terrorist group, criminal organization, or rogue state of attacking the United States with a

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<sup>128</sup> Fainaru and Booth, "As Mexico Battles Cartels."

<sup>129</sup> E. Eduardo Castillo, "Mexico Angered by Drug Lord's Spot on Forbes List," *USA Today*, November 13, 2009, [http://www.usatoday.com/money/media/2009-11-13-forbes-drug-lord\\_N.htm?csp=outbrain&obref=obnetwork](http://www.usatoday.com/money/media/2009-11-13-forbes-drug-lord_N.htm?csp=outbrain&obref=obnetwork) (accessed on June 6, 2010).

<sup>130</sup> Danna Harman, "Mexicans take over Drug Trade to US," *Christian Science Monitor*, August 16, 2005, <http://www.csmonitor.com/2005/0816/p01s03-woam.html> (accessed on June 6, 2010).

<sup>131</sup> U.S. Department of Justice National Drug Intelligence Center, "U.S. Southwest Border Smuggling and Violence," National Drug Threat Assessment 2010, under, "Traffickers' Use of Subterranean Tunnels Along the Southwest Border," <http://www.justice.gov/ndic/pubs38/38661/swb.htm#Top> (accessed on June 6, 2010).

biowapon. Moreover, the Mexican cartels are perfectly suited to conduct such an attack based on their vast resources, their infrastructure and connections within the United States, and their adeptness at transporting contraband across the border in spite of intense law enforcement scrutiny.

### **Ruthlessness**

For the purpose of this thesis, ruthlessness is the willingness to conduct an act that harms others while helping the actor. Ruthlessness increases when the act is more harmful to others but the benefit to the actor remains constant. In the case of the Mexican drug cartels, ruthlessness is measured by violence. The level of violence committed by the cartels can be used to answer the question of whether they are ruthless enough to use a biological weapon.

**Body Count Statistics** The key measure of violence is the death toll. According to the Associate Press, which gained access to a confidential Mexican government report, the number of people who have died in the three year war between the drug cartels is 22,700.<sup>132</sup> The vast majority of these deaths are cartel members, but innocent civilians, police, and soldiers are also included in this figure. As a sign of increasing ruthlessness, the death rates have increased each year. In 2009, 9,635 people were killed. From January through March of 2010, 3,365 people were killed, making a total of 13,460 for 2010 if the trend stays consistent.<sup>133</sup> Cartel members have killed while attempting to gain

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<sup>132</sup> Ellingwood, "Mexico Death Toll."

<sup>133</sup> Ibid.

territory, to punish others for betrayals, as retribution for other deaths, to intimidate the government and the public, and to replace uncorrupt officials with corrupt officials.<sup>134</sup>

**Torture, Mutilation, and Beheadings** Another sign of increasing ruthlessness is the increasingly gruesome methods of killing, torture, and mutilation. From 2007 to 2009, beheadings increased from twenty to 145.<sup>135</sup> Generally, the headless bodies are found in some public area, while the missing heads are found in another. For example, on March 31, 2010, four heads were found at the feet of a statue of former President Lazaro Cardenas in a park in Apatzingan, Michoacan.<sup>136</sup> The most infamous case of beheadings was committed by La Familia when, in September 2006, men burst into a night club in Uruapan, Michoacan, dropped five heads onto the dance floor, and left a message that read "La Familia doesn't kill for money. It kills only those who deserve to die." In addition, La Familia was responsible for erecting a cross beside a road from which five heads hung.<sup>137</sup> For fear of being outdone, La Familia leaves headless bodies in public areas and arranges for photographs of the scenes to be published in Michoacan tabloids.

La Familia's violence, however, has not been limited to severed heads. It has also killed its enemies by boiling them to death and gouging their skulls with ice picks.<sup>138</sup> La Familia is not unrivaled in its brutality. Los Zetas are considered one of the more brutal

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<sup>134</sup> U.S. Congressional Research Service, *Mexico's Drug-related Violence*, 11-12.

<sup>135</sup> Peter M. Leitner, "Global Terrorists' Profiles and CBRE Threats" (presentation at the Second International CBRE Operations Conference, Raffles City Convention Centre, Singapore, December 8-11, 2009).

<sup>136</sup> Open Source Center, "Mexico: Four Severed Heads."

<sup>137</sup> Fainaru and Booth, "Mexican Cartel's Swift and Grisly Climb," under "Competing to Kill."

<sup>138</sup> Ibid.

cartels. After a raid was conducted on one of their buildings a crusty table for torturing people was discovered.<sup>139</sup> More evidence of their affinity for torturing can be discerned from the report of several Zetas kidnapping the Grammy nominated singer, Sergio Gomez, torturing him, to include burning his testicles with a blowtorch, and leaving his mutilated body on the side of a road. This act was retribution for singing ballads about a rival cartel.<sup>140</sup>

**Violence against Civilians** In the past, cartels have been careful not to target or kill civilians for fear of losing the public's tacit approval of their existence. Unfortunately, cartels are breaking this rule with increasing regularity. Los Zetas are the biggest offenders of this rule, to the point that other cartels have combined forces against them to stop them from harassing and killing civilians.<sup>141</sup> For example, a group of Zetas walked into a Monterrey nightclub and robbed everyone inside for not buying their drugs. This trend is now being emulated by the other cartels.<sup>142</sup>

During the fight over Juarez between the Sinaloa and Juarez cartels, violence against civilians escalated to a new high. In one instance, cartel members threatened teachers that they would start killing students if the teachers did not forfeit their Christmas bonuses to the cartel.<sup>143</sup> Once the Sinaloa cartel gained control of Juarez, its

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<sup>139</sup> Ioan Grillo, "The Danger of Singing about Drugs," *Globalpost*, February 2, 2009, <http://www.globalpost.com/dispatch/mexico/090130/the-danger-singing-about-drugs> (accessed on June 6, 2010).

<sup>140</sup> *Ibid.*

<sup>141</sup> John Murray, "Ciudad Juarez: War Against Los Zetas, Along the Gulf and Into America," *The Awl*, <http://www.theawl.com/2010/04/ciudad-juarez-war-against-los-zetas-along-the-gulf-and-into-america> (accessed June 6, 2010).

<sup>142</sup> Pancho Montana, "Mexican Drug Cartels Raid Massive Rave Parties, Crack Down On Rival Pushers....," *The Exiled*, entry posted on February 28, 2010, <http://exiledonline.com/the-economy-is-bad-for-mexican-drug-cartels-too-zetas-start-shaking-down-kids-at-raves/> (accessed on June 7, 2010).

members began burning down houses, churches, and businesses in order to run town residents out to prevent them from interfering with operations.<sup>144</sup>

Reliance on heavy-handed tactics to intimidate the public could cause cartels to employ even more ruthless tactics over time. Increasingly brutal tactics could cause the public to turn against the cartels. This may then force cartels to act even more harshly against the public in order to quell any uprisings and gain their acquiescence.

**Summary** Increasing brutality against rival cartel members and initiating violence against civilians indicates that the cartels are becoming more ruthless. The thousands that are already dead combined with an increasing death rate and deteriorating regard for the living confirm that cartels are ruthless enough to use a bioweapon to solve their strategic problems and accomplish their financial objectives. The chief of anti-drug operations at Mexico's Public Security Ministry, Rafael Pequeño García, succinctly provided a rationale for the growing ruthlessness when he said, "When a cartel is divided into smaller pieces, the pieces become more violent. Because when you break up a big cartel, the people with access to command are the sicarios, the hit men. Now the killers are running the organizations. That is why they are so violent. They don't know anything about negotiation. Everything is about force and fear."<sup>145</sup>

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<sup>143</sup> Washington Post, "A Neighborhood on the Brink," Washington Post Web site, Flash video file, 2:27, <http://www.washingtonpost.com/wp-srv/world/interactives/mexico-at-war/video.html> (accessed on June 7, 2010).

<sup>144</sup> Mark Stevenson and Alicia A. Caldwell, "Mexican Cartels Empty Border Towns," *Denver Post Web site*, April 16, 2010, [http://www.denverpost.com/nationworld/ci\\_14898094](http://www.denverpost.com/nationworld/ci_14898094) (accessed on June 7, 2010).

<sup>145</sup> Fainaru and Booth, "Mexican Cartel's Swift and Grisly Climb," under "Competing to Kill."

## **Motivations**

Besides being capable and ruthless enough, a cartel would still need a reason to launch a biological attack. As rational actors, cartel leaders would first need a problem worthy of considering such a drastic action. Moreover, a cartel head would consent to this action based on increasing, or at least maintaining, the cartel's financial well-being. Finally, a biological attack would only be suitable if a boss would calculate in some sense that the advantages outweighed the negatives. With the state of affairs being what they are for the Mexican cartels, one does, or soon will, have enough motivation to use a biological weapon to try to improve his cartel's situation. Such motivations include making the environment more conducive to cartel operations, eliminating or discouraging a threat, negotiating terms from an unassailable position, or shifting the perception of the drug war.

**What Could a Cartel Gain?** Launching a biological attack, particularly one that targeted the Mexican government or the military forces, could be a good step towards reducing the counterdrug efforts and returning Mexico to its pre-2007 state, before the pressure on the cartels and the crackdown on drug-based corruption began. This would create an environment that is more favorable to conducting drug trade business due to less drug interdiction and law enforcement. This would also be a safer environment for the cartel heads. An attack by a cartel against the government would be designed to intimidate public officials rather than destroy the government structure. Government officials, including police and military, who fear for their safety are easier to control and can divert law enforcement efforts allowing a cartel to operate without interference.<sup>146</sup>

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<sup>146</sup> U.S. Congressional Research Service, *Mexico's Drug-related Violence*, 11.

This attack could also tip a teetering public into blaming President Calderon for all of the deaths. Victims and families of victims already blame President Calderon for all of the violence.<sup>147</sup> Many in Mexico blame President Calderon for instigating this war that has disrupted so many Mexican lives. Many also believe that involving the military needlessly escalated the war. Additionally, President Calderon has alienated many politicians at all levels of government while trying to eliminate corruption. A catastrophic event such as a bioattack could turn the Mexican population and government officials against President Calderon, leaving him powerless and forcing him to abandon his staunch counterdrug policies.

**Who Could a Cartel Attack?** Although the previous motivations in effect eliminate a threat, a cartel boss could desire to use a biological weapon directly against a threatening entity. Such threats include another cartel, the Mexican military and federal law enforcement, or any interfering U.S. entity.

When attacking another cartel several scenarios are possible. A weak cartel could attack a stronger cartel in a desperate act of self-preservation. A strong cartel could use a bioattack to wipe out the last stubborn hold-outs that stand between it and new territory. Finally, one cartel could decide to use a biological weapon to break a stalemate with another cartel of equal strength. A tabular representation of the motivations based on the involved cartels' relative strength is provided in Table 3 on the following page.

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<sup>147</sup> Washington Post, "The Agony of the Victims," Washington Post Web site, Flash video file, 2:20, <http://www.washingtonpost.com/wp-srv/world/interactives/mexico-at-war/video.html> (accessed on June 7, 2010).



Attacking Cartel	Target Cartel	Motivation
Weak	Strong	Self-preservation
Strong	Weak	Consolidate power
Equal	Equal	Break stalemate

**Table 3. Motivations for Cartel-on-Cartel Attack based on Relative Strength**

A bioattack against Mexican federal law enforcement and military would be a reaction to effective counterdrug activities. A cartel may be forced into a corner or the military could be gaining a strategic advantage in the war. The cartel may view a biological weapon as the best way to counter the military's strategic position and to disrupt its momentum. After being attacked with a biological weapon, Mexican forces would surely suspend its operations, reassess its plans, and develop contingencies.

As a source of equipment, funding, and expertise for Mexican counterdrug efforts, the United States could also be targeted by a cartel, especially if the efforts become more effective or if the United States becomes more directly involved. An attack inside the United States could possibly discourage U.S. support or further involvement. Alternatively, an attack could also promote increased U.S. involvement. A cartel may be desperate enough to take the risk. The point of an attack on the United States could also be to make the U.S. government understand that there will be consequences to getting involved in the drug war and to supporting the Mexican law enforcement and military. The message will also be sent that the United States will not be able to kill cartel members with impunity.

In addition to attempting to accomplish an aforementioned goal, a motivational byproduct that will be present in any of these decisions will be the elevation of the

cartel's position of power. A cartel that has the nerve to take such a strategic risk and the capability to successfully launch a biological attack will be considered with increased respect and its demands and proposals will garner more attention. Its enemies will instantly recognize that it is a dangerous organization and that it should be treated carefully or avoided completely.

## **CONCLUSION**

Cartels are competent and dangerous organizations operating under increasing pressure. Each cartel is raiding territory while protecting their own from another's raids. In addition, they are fighting the Mexican and U.S. governments' attempts to wipe them all out. As proven by the accelerating body count and the evolving terror tactics, these organizations have no apprehensions about doing anything necessary to protect their interests and eliminate a threat. In addition to their ruthlessness, these organizations are intelligent enough to assess their situations and select a solution to their problems. So far, the solutions have involved escalating the violence, but their practices are becoming more sophisticated. Eventually, the environment that all of the fighting groups have created will devolve to such a point that one or several of the cartels will be forced to react in a vicious and novel way to transform the nature of the conflict. The goal of such an attack would be to rearrange the hierarchy of the cartels with the attacking one on top.

With such formidable enemies as the other cartels and the U.S. and Mexican governments, the attacking cartel must choose an appropriate weapon and attack plan. A large scale attack would be imperative, but massive killings have been done repeatedly

and have lost their effect. A new way of killing would attract attention and demand respect. The cartel that would strike first with a biological weapon would gain several strategic advantages. That cartel could make follow up plans while its enemies were caught off guard. The attacking cartel could use the element of surprise to advance against its foes, grab key territory, and consolidate its power. Additionally, such a sophisticated attack would cause the other sides to consider the repercussions of attacking such a capable organization. Such considerations would give that cartel wide latitude to act and the opportunity to be the aggressor.

If a cartel decided to reshape the strategic landscape of a conflict with such fearsome foes, then it would be imperative for the cartel to take an unprecedented step. With the levels of violence that have been attained, the only unprecedented step left is a WMD and the most ideal and practical WMD to use is a bioweapon.

## **CHAPTER 4**

### **Heating up the Plaza**

#### **INTRODUCTION**

Now that it has been established that the cartels are a threat to use a biological weapon, the next step is to determine how one of them would use one and what goals it would want to accomplish. This chapter describes a scenario involving the steps that may be taken by a cartel leading up to and during a biological attack. This scenario will branch into several directions to incorporate different possible attack details, goals, and motivations. The hostile cartel will pick a target, decide how to attack that target, and select a pathogenic agent and delivery method.

#### **Scenario Scope and Assumptions**

This scenario does not rule out any possibilities that are not covered. It is acknowledged that multiple variables exist when discussing biological attacks and that many permutations can arise to create different scenarios. It is possible that a cartel could launch a biological attack in a variety of ways for a variety of reasons. This scenario covers only a narrow range of paths that a cartel could take.

A cartel has many goals at the strategic, operational, and tactical levels and could be driving to accomplish several of them at once. In this scenario, only a strategic goal

will be covered. The cartel's goal will be to become more powerful and create an environment in Mexico that is more beneficial to the drug trade.

A cartel could choose from multiple targets and attack more than one. The cartel could pick from different nations and could choose from different entities within that nation to attack. The cartel in this scenario will attack the United States civilian population.

Different strategies and weapons could be used to attack the target. Explosives, small arms assaults, cyber attacks, or WMD are all viable threats and a cartel could have several reasons for picking one over the other. This cartel, however, will choose to use a biological weapon. It is assumed in this scenario that the cartel will want to display a certain amount of sophistication that is not characteristic of the other weapons and tactics. Additionally, a greater amount of user anonymity and attack covertness is possible with a bioweapon than with other options. For instance, if a cartel chose to conduct a small arms strike on an American shopping mall, then it is possible that one of the attackers could get wounded in a firefight and captured. The attacker could then divulge sensitive information under interrogation. This scenario assumes that the cartel will want to avoid such a situation, possibly out of concern of retaliation.

If desired, then the effects of the attack would be undetectable for a certain period of time due to the incubation periods of the biological agent. Furthermore, when the infections are detected, they may be attributed to natural causes rather than an attack. Such was the case in the first days of the anthrax attack.<sup>148</sup> With other weapons and tactics, the attack is generally detected immediately. It is assumed that this cartel will choose this feature instead of something more impactful and immediate, so that it can

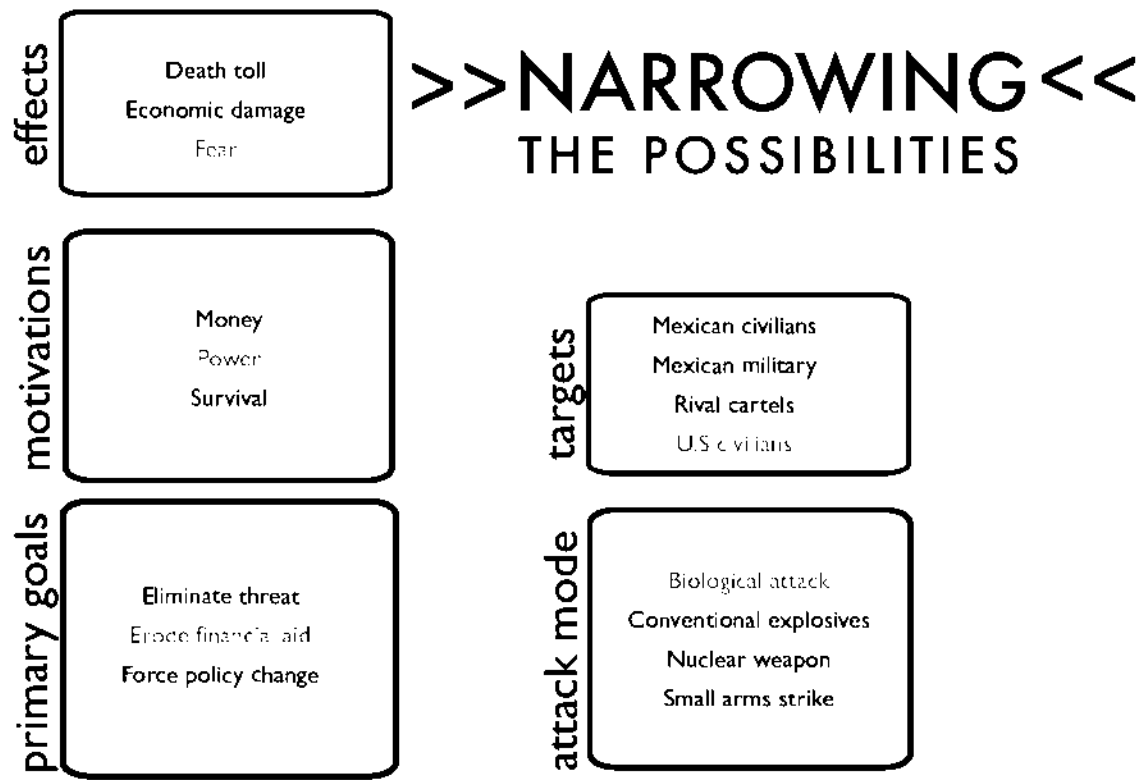
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<sup>148</sup> Cole, *Anthrax Letters*, 18.

decide on how to manipulate the attack based on the feedback it is receiving about public reactions and government responses.

Different effects can be caused by using a biological weapon. As discussed in the Chapter One, body count, economic damage, and fear are three such effects. This scenario will assume that this cartel will conclude that the best way to accomplish its goal is to generate fear in the U.S. public as opposed to killing a large number or devastating the economy. This cartel will also want the option of using the anonymity and covertness inherent in a bioweapon to help generate more panic and confusion. Although cartels have vast resources, it will be assumed that a cartel will choose to conduct a targeted, small-scale attack rather than a large-scale attack that uses wide-area aerosol dispersal. It is difficult and time-consuming to create large quantities of biological agent and this scenario's cartel could accomplish its goal by using a small amount.

In summary, this scenario will focus on a cartel that attacks the United States populace with three biological agents: tularemia, pneumonic plague, and Q fever, which is shown in the “targets” and “attack mode” boxes of Figure 9 on the following page. The cartel's motivation, as detailed in the “motivations” box of Figure 9, is to create an environment in Mexico that is more conducive to the drug trade and to increase its own



**Figure 9. Scenario Boundaries**

power and status. The purpose of this attack is to generate enough fear (illustrated in the Figure 9 “effects” box) in the public to sap the political will supporting the U.S. involvement of the Mexican drug war. As a result, U.S. financial and material support to the Mexican government will then diminish, which is represented in the “primary goals” box of Figure 9.

It will be assumed that this cartel will engage in various denial and deception practices in order to retain the option of concealing its identity. Anonymity may be the key to surviving massive retaliation from the United States. Multiple methods to hide the cartel’s involvement, including the use of a “See-Think-Do” denial and deception operation, will be discussed. Additionally, the cartel will use a front company,

specifically a livestock veterinarian clinic, to hide its financial connections to the bioweapon development. The veterinarian clinic will also provide a suitable place to research and develop the bioweapon. Once the biological agent is developed, it will be transported into the United States and dispersed using public bathroom automatic deodorizer sprayers.

### **Defining Success**

To begin, it is important to determine how the antagonistic cartel would measure a successful attack. It would define a successful attack as one that fulfilled its objective and accomplished their goals. In any given period of time, a cartel could have numerous goals. The following are three of many possible goals.

- One goal could be to improve its standing among the other cartels. An improved standing could increase its power and could negotiate business arrangements more effectively from a higher position of power.
- A second reason to launch a biological attack could be to intimidate the Mexican government. Such a show of ruthlessness and capability could scare the various factions of the government into paralysis or pit politicians against Calderon's counterdrug policies.
- Another goal could be to change the environment from one that is currently dominated by battles with Mexican government forces to one that is more favorable to cartel business and a government that is more permissive of the drug trade. To accomplish this goal, the target of an attack could be the Mexican forces. It could also be the U.S. support structure that is bolstering the Mexican



forces. For the sake of this scenario, the cartel will launch a bioattack in pursuit of this goal. The cartel will bear the brunt of the direct attack from the Mexican military while attacking the U.S. support foundation.

How could a cartel conduct an attack on the United States that would exploit the weaknesses unveiled by the 2001 anthrax attacks? The cartels have been given a good template for the way that different groups (public, law enforcement, politicians, media) in the U.S. will react to a biological attack. They now have an idea of how to manipulate the different groups to react or respond in a specific way.

The cartel could perform a strategic assessment of its goals and capabilities, the combative landscape, and its enemies' position and weaknesses. Based on this assessment, the cartel could then attack its enemies' center of gravity. Karl von Clausewitz defined the center of gravity as the point that all forces should focus on to defeat an enemy. Clausewitz generally considered an enemy's military as the center of gravity.<sup>149</sup> However, later military philosophies, such as General Ulysses S. Grant's total war doctrine, found that the center of gravity could also be the enemy's political will, civilian morale, or some other factor.<sup>150</sup>

### **AirLand Battle Parallel**

The concepts in this scenario of attacking the U.S. support structure of the Mexican military and selecting the enemy's civilian morale as the center of gravity are

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<sup>149</sup> Karl von Clausewitz, "On War," in *The Book of War*, ed. Caleb Carr (New York: Modern Library, 2000), 948.

<sup>150</sup> Robert C. Ehrhart, "The Civil War: Analysis, Modern Warfare and Society," *Modern Warfare and Society* 1 (1979): 15, [http://ndic.blackboard.com/webapps/portal/frameset.jsp?tab=courses&url=/bin/common/course.pl?course\\_id=\\_2926\\_1](http://ndic.blackboard.com/webapps/portal/frameset.jsp?tab=courses&url=/bin/common/course.pl?course_id=_2926_1) (accessed through Blackboard on October 15, 2009).

inspired by the AirLand Battle doctrine. The AirLand Battle doctrine attempted to solve the problem of defending Europe against a Soviet invasion during the Cold War.

Previous war plans failed to solve several persistent problems. During the 1960's and 1970's, the Soviets had built up their forces to the point that they greatly outnumbered NATO forces.<sup>151</sup> The Fulda Gap in Germany was Europe's most vulnerable spot and the most likely starting point of the Soviet Invasion.<sup>152</sup> Since NATO conventional forces would be overrun at the Fulda Gap, traditional doctrine relied on the use of nuclear weapons to stop Soviet forces.<sup>153</sup> This option, however, would destroy the area that NATO was supposed to protect.

The AirLand Battle doctrine attempted to address the defense of Europe without the use of nuclear weapons. Instead, the doctrine relied on coordination between air and ground forces and deepening the battlefield.<sup>154</sup> To counter the overwhelming Soviet forces, the doctrine dictated that NATO forces would attack and interdict the Soviet follow-on echelons.<sup>155</sup> Strikes deep into enemy formations would sever command and control connections and lines of communication.<sup>156</sup> The rear echelon attack would then isolate frontal forces and disrupt the momentum of the attack. The AirLand Battle

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<sup>151</sup> Alvin Toffler and Heidi Toffler, *War and Anti-war* (New York: Warner Books, 1993), 50-51.

<sup>152</sup> *Ibid.*, 51.

<sup>153</sup> *Ibid.*

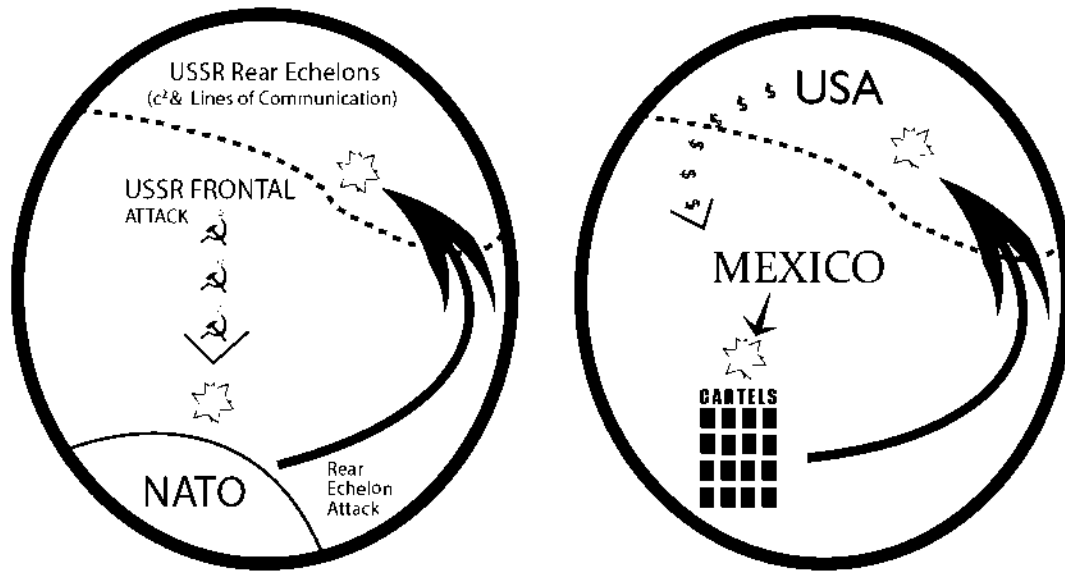
<sup>154</sup> John L. Romjue, "The Evolution of the Airland Battle Concept," *Air University Review* (May-June 1984), under "The Extended Battlefield," <http://www.airpower.maxwell.af.mil/airechronicles/aureview/1984/may-jun/romjue.html> (accessed June 8, 2010).

<sup>155</sup> *Ibid.*

<sup>156</sup> Toffler and Toffler, *War and Anti-war*, 60.

doctrine not only leveled the playing ground against the Soviet Union, but it also enabled the United States to project its power over great distances.<sup>157</sup>

#### AirLand Battle Doctrine vs. Narco-terrorist Bioattack



**Figure 10. AirLand Battle Parallel**

A drug cartel could take an analogous step to break the momentum of the U.S./Mexican-combined offensive. When placed in the paradigm of the AirLand Battle, the drug cartel would represent the NATO forces, the Mexican military would correspond to the Soviet front-line forces, and the United States would embody the supply and logistic echelons of the Soviet forces. The cartel would simultaneously withstand the blows from the frontal forces of the Mexican military and federal law enforcement while launching a rear-echelon bioattack against the United States. Such an attack could cut off cooperation between the two countries and reduce Mexico's capabilities to fight the cartels. Similarities between the AirLand Battle Doctrine and this scenario are represented in Figure 10. The figure shows that both the U.S. forces and the Mexican

<sup>157</sup> Toffler and Toffler, *War and Anti-war*, 62.

cartels would have to endure heavy frontal blows from a larger force and simultaneously attack the more vulnerable part of the enemy to sever the tip of the spear from its shaft, thereby taking away its ability to conduct a sustaining thrust.

## **THE WEAPON SELECTION**

### **Elaboration on the Cartel's Goal**

A cartel would have to look at its strategic position relative to its enemies and in the context of the environment. If a cartel determined that using previous tactics to follow previous strategies will not enhance its position, then it may conclude that a strategic shift is necessary.

As a general proposition, a cartel's goal is to maximize its money-making potential. It does this by conducting operations that tap into the full value of its routes and territory. Regular operating costs consist of defending against rival cartels, raiding territory, deceiving or co-opting government and military officials, and losing product to effective law enforcement efforts. Current operating costs also include fighting Mexican military forces. Cartel forces have unsuccessfully attempted to beat off the military through frontal assaults.<sup>158</sup> The military's ability to withstand challenges is partly due to the financial and political support of the United States, including the \$1 billion that it has been receiving through the Merida Initiative counter-drug agreement between the two countries.<sup>159</sup> American money and assistance has been a constant throughout the Mexican drug wars and there is the danger that American involvement could grow and

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<sup>158</sup> CBSnews.com, "Mexico Drug Gangs Attack."

<sup>159</sup> U.S. Department of State, "The Merida Initiative."

become more direct. A cartel could view the United States as a reason for the current counter-drug offensive and an increasing threat. A cartel leader may believe that decreasing U.S. involvement in the drug war may bring an optimal environment for cartel activities. Additionally, a cartel that was responsible for reducing American involvement could be held in higher regard by its enemy cartels.

A cartel could attempt to force the United States to change its counter-drug policies by attacking its political will. U.S. political will is supported by civilian morale. Civilian morale is often the American, or any other democracy's, center of gravity. Furthermore, political will may also crumble at the threat of hurting civilian morale due to loss of American lives, regardless of whether those lives are civilian or military. It can be argued that this happened during the 1993 Somali conflict. Before the conflict there was a quick build-up of U.S. forces with the intent of capturing warlord, Mohamed Farrah Aidid. However, after the conflict in which eighteen U.S. soldiers were killed, U.S. forces were withdrawn and the hunt for Aidid was abandoned by President Bill Clinton at the urging of members of Congress.<sup>160</sup> During this engagement, American forces were withdrawn out of fear that dead Americans would demoralize the population. When civilian enthusiasm for a war is high, then political fortitude to fight a war is more resilient. Conversely, when the public has lost the heart to fight, then political dedication to a war crumbles, as was the case with the Vietnam War.<sup>161</sup> Therefore, if a cartel's desire is to create a more favorable operating environment for his cartel, a leader's

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<sup>160</sup> Frontline, "Ambush in Mogadishu," WGBH Educational Foundation, <http://www.phs.org/wgbh/pages/frontline/shows/ambush/etc/cron.html> (accessed on June 7, 2010); John M. Broder and Michael Ross, "Senate Agrees to Withdrawal from Somalia before April," *Los Angeles Times*, October 15, 1993, <http://tech.mit.edu/V113/N49/somalia2.49w.html> (accessed on June 7, 2010).

<sup>161</sup> Thomas X. Hammes, *The Sling and the Stone: On War in the 21<sup>st</sup> Century* (St. Paul, MN: Zenith Press, 2006), 67.

objective could then be to reduce U.S. involvement in the drug war by attacking civilian enthusiasm to fight and weakening political resolve.

### **Matching the Weapon to the Goal**

As mentioned in the previous chapter, a powerful weapon must be wielded when combating the United States. A biological attack against the U.S. population would be such a weapon. To devastate civilian morale, a bioattack would focus on creating the maximum amount of fear in the U.S. population. Several of the methods discussed in Chapter Two could be used to elicit such fear. The attack could cause panic by sending various messages through the media to the public and policy-makers. Such messages could be threatening and convey pieces of the plan or the messages could be fabricated to drum up confusion. Like the 2001 anthrax attacks, this cartel attack will occur in several phases. Different phases will draw out the attack and give the impression that it could last for a long time. Different phases will enhance the fear of the unknown. A high body count, while an effect of its own, would also boost public fear and panic. The population could be frightened and demoralized even further if the body count consisted of specific groups of people, especially children.

Fortunately for a cartel, a bioattack allows it to adjust the scale and effects of the attack to match the size of the enemies. With an enemy as powerful as the United States, a cartel has the ability to amplify the scale of the attack. In addition to the scale of the attack, the cartel can control certain factors of the attack and even transform the nature of the attack after it has already begun. One such example is the ability to adjust the stealth of the attack. A biological weapon gives the cartel boss the option of remaining silent to

make the outbreak seem like a natural occurrence, to claim credit from the beginning, or some option in between. Another benefit is that a bioattack demonstrates a level of sophistication that tells U.S. policymakers that they are facing a formidable adversary. A high level of competence and capability will scare the population and possibly intimidate the national leaders. However, a biological weapon has the least controllable and predictable effects compared to chemical, nuclear, and explosive weapons. This is especially true when using a transmissible biological agent. A biological agent could be more or less virulent than expected. Its effects could last a long or short time. The effects could even reverse course and infect the attackers and other members behind the attack. This unpredictability, however, could be harnessed by the cartel and cause more fear.

### **The Selection Process**

Once the cartel knows that it wants to scare U.S. civilians and sap U.S. political will, it must select a suitable pathogen. The cartel leader will want a fear inducing pathogen. The fear generating capability of a biological agent could be judged by many characteristics. In this scenario, an agent is judged on its ability to cause terror and panic by three characteristics: its bodily effects, its curability, and its transmissibility. An agent that causes severe pain and bodily damage, has visible or graphic symptoms that the media and public imagination can take hold of, is difficult to cure, and is extremely contagious would be necessary. Pathogens such as smallpox or Marburg hemorrhagic fever would be ideal.

A bioattack planner, however, must also consider practical limitations. Smallpox and Marburg are difficult to attain. Other attractive agents are difficult to cultivate, prepare, or disperse. A technician would like to work with an agent that is easily acquired, grown, stored, and dispersed as an aerosol.

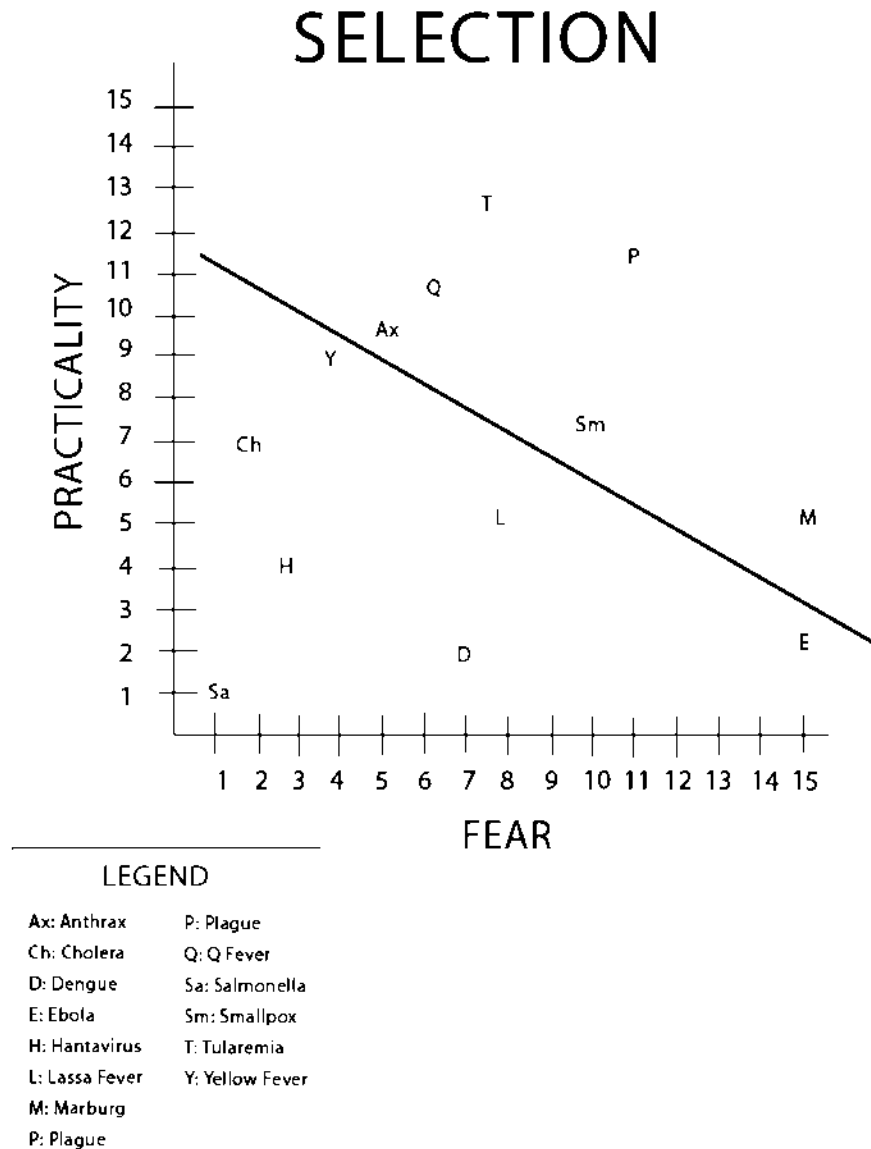
When selecting an agent for a biological attack, a balance must be met between the amount of fear caused by an agent and the practicality of using an undemanding agent. The below chart in Figure 11 plots the terror inducement versus the practicality of an agent. Factors used to rank the terrorizing ability of an agent were bodily symptoms, pain, familiarity of the agent to the public, transmissibility, and curability. Factors used to rank the practicality were accessibility, manufacturability, ease of dispersion, prior weaponization, stability as an aerosol, persistence in the environment, storability. Pathogenic characteristics found on the CDC bioterrorism agent website, Mayo Clinic Diseases and Conditions website, the U.S. Army Medical Department Borden Institute website, a CRS report written by Dana A. Shea and Frank Gottron, and a report prepared by Dr. Peter Leitner were used to select and rank the pathogens.<sup>162</sup> As one can see the pathogens are spread across the spectrum of practicality and terror production. The ideal pathogen would be found in the upper right corner of the graph as it would possess

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<sup>162</sup> Center for Disease Control and Prevention, "Bioterrorism Agents/Diseases," <http://www.bt.cdc.gov/agent/agentlist.asp> (accessed on June 8, 2010); Mayo Clinic, "Diseases and Conditions," <http://www.mayoclinic.com/health/DiseasesIndex/DiseasesIndex/METHOD=displayAlphaList&LISTTYPE=mcDisease&LETTER=1> (accessed on June 8, 2010); U.S. Army Medical Department, Borden Institute, "Medical Aspects of Chemical and Biological Warfare," [http://www.bordeninstitute.army.mil/published\\_volumes/cbcbio/cbcbio.html](http://www.bordeninstitute.army.mil/published_volumes/cbcbio/cbcbio.html) (accessed on June 8, 2010); U.S. Congressional Research Service, *Small-scale Terrorist Attacks Using Chemical and Biological Agents: An Assessment Framework and Preliminary Comparisons*, by Dana A. Shea and Frank Gottron, 24-25, <http://www.fas.org/irp/crs/RL32391.pdf> (accessed on June 8, 2010); Leitner, "Global Terrorists' Profiles and CBRE Threats."



maximum practicality and fear generation. Conversely, a pathogen found in the lower left corner would be the least desirable as it would be neither practical nor terrorizing.



**Figure 11. Biological Agent Selection Graph**

According to the chart tularemia, pneumonic plague, Q-fever, and smallpox are the closest to the upper-right corner which signifies that they have the best balance between practicality and fear inducement. A side note about smallpox: if this virus was more accessible to the cartel in this scenario, then its ability to be weaponized and cause

fear would make it an extremely practical and most ideal bioweapon. As it is, however, smallpox is no longer found in nature and exists most readily in heavily protected laboratories. Although it is possible that a cartel could use its vast resources to look for and acquire smallpox, this scenario is assuming that the cartel would exclude smallpox as a probable bioweapon.

Tularemia, pneumonic plague, and Q-fever still remain as viable options for selection by the cartel's bioweapon developer. The developer could pick any or all of these agents.

**Tularemia** Tularemia is caused by the bacterium *Francisella tularensis*. Naturally, the bacteria are found in rodents and can be transmitted through ticks, mosquitoes, and biting flies. Tularemia can also be spread through handling diseased carcasses, eating and drinking contaminated food and water, and inhaling the bacteria. Symptoms of

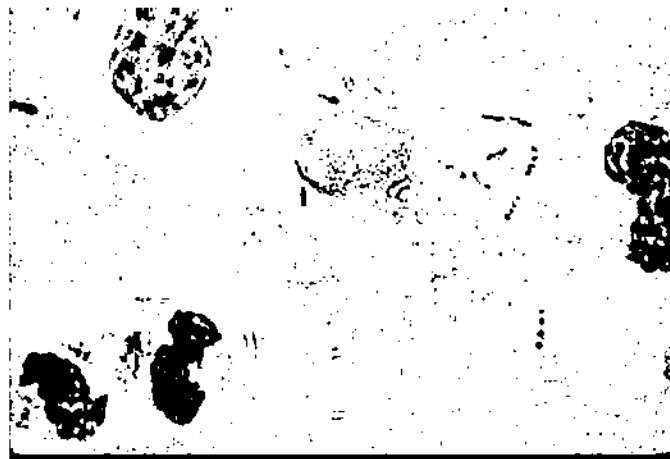


**Figure 12. Tularemia Infection**

**Source:** Hardin Library for the Health Sciences, University of Iowa, "Tularemia Picture," <http://www.lib.uiowa.edu/hardin/md/cdc/tularemia1.html> (accessed on June 7, 2010).

tularemia appear three to fourteen days after exposure and include skin lesions (as shown in Figure 12) fever, diarrhea, joint pain, headaches, and progressive weakness. Tularemia is generally treated with antibiotics.<sup>163</sup> Tularemia kills 5% of those infected without antibiotic treatment and 1% of those infected with antibiotic treatment.<sup>164</sup>

**Pneumonic plague** Pneumonic plague is caused by the bacterium *Yersinia pestis* (shown among blood cells in Figure 13). The bubonic form of the disease is spread through fleas that received the disease from infected rodents. The pneumonic form is spread by inhaling aerosolized droplets of an infected individual.<sup>165</sup> Symptoms of pneumonic plague arise two to six days after exposure and include fever,



**Figure 13. Plague Bacteria, *Yersinia pestis***

**Source:** Center for Disease Control and Prevention, "Image: Plague Bacteria in Blood," <http://www.cdc.gov/ncidod/dvbid/plague/pl.htm> (accessed on June 7, 2010).

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<sup>163</sup> Center for Disease Control and Prevention, "Key Facts about Tularemia," under "How is Tularemia Treated?" <http://www.bt.cdc.gov/agent/tularemia/facts.asp> (accessed on June 8, 2010).

<sup>164</sup> MedlinePlus, "Tularemia," U.S. National Library of Medicine and U.S. National Institutes of Health, under "Outlook (Prognosis)," <http://www.nlm.nih.gov/medlineplus/ency/article/000856.htm> (accessed on June 8, 2010).

<sup>165</sup> World Health Organization, "Plague," under "Overview," <http://www.who.int/mediacentre/factsheets/fs267/en/> (accessed on June 8, 2010).

difficult breathing, and a persistent cough that produces bloody sputum.<sup>166</sup> Pneumonic plague is generally treated with antibiotics. Pneumonic plague kills 30-60% of the infected that go untreated, but timely diagnosis and appropriate treatment cures almost all patients.<sup>167</sup>

**Q fever** Q fever is caused by the bacterium *Coxiella burnetii*. Q fever is commonly found in sheep, goats, and cattle and is spread through urine, feces, birth byproducts, and milk. Additionally, Q fever can be transmitted through dried forms of these substances which turn into dust that can be inhaled by humans.<sup>168</sup> It is possible but extremely rare for Q fever to be transmitted from human to human.<sup>169</sup> Symptoms of Q fever are apparent two to three weeks after exposure and include severe headaches and muscle pain, diarrhea and vomiting, chest and abdominal pain, and fatigue. Patients can also have a chronic Q fever infection.<sup>170</sup> Q fever can be treated with antibiotics.<sup>171</sup> Less than 1% of those with an acute infection die from Q fever. A chronic infection of Q

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<sup>166</sup> Center for Disease Control and Prevention, "Plague Fact Sheet," under "Q. What are the signs and symptoms of plague?" <http://www.cdc.gov/ncidod/dvbid/plague/resources/plagueFactSheet.pdf> (accessed on June 9, 2010).

<sup>167</sup> World Health Organization, "Plague," under "Overview."

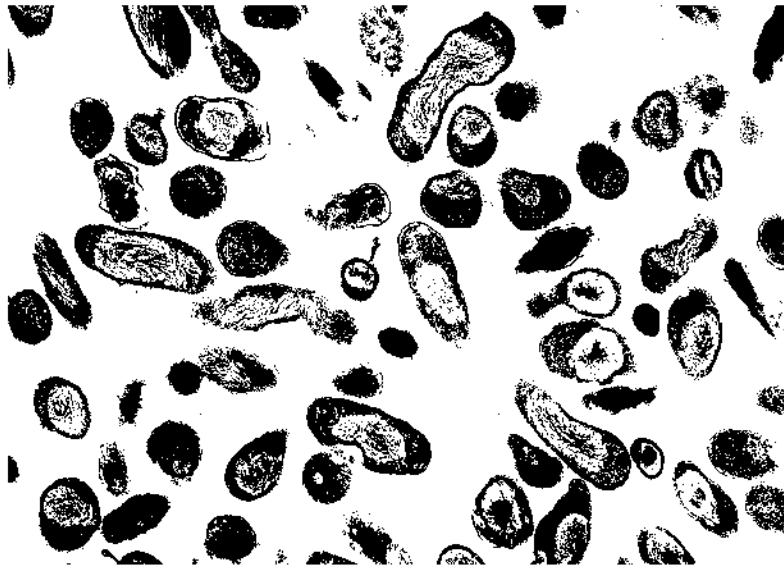
<sup>168</sup> Mayo Clinic Staff, "Q fever: Causes," Mayo Clinic, <http://www.mayoclinic.com/health/q-fever/DS00960/DSECTION=causes> (accessed on June 9, 2010).

<sup>169</sup> Julie O'Neill, "What is Q Fever," from *Q Fever Information Kit for the Australian Meat Industry*, Australian Q Fever Register, under "Transmission to Humans," <http://www.qfever.org/aboutqfever.php> (accessed on June 9, 2010).

<sup>170</sup> Mayo Clinic Staff, "Q fever: Symptoms," Mayo Clinic, <http://www.mayoclinic.com/health/q-fever/DS00960/DSECTION=symptoms> (accessed on June 9, 2010).

<sup>171</sup> Mayo Clinic Staff, "Q fever: Treatments and Drugs," Mayo Clinic, <http://www.mayoclinic.com/health/q-fever/DS00960/DSECTION=treatments-and-drugs> (accessed on June 9, 2010).

fever, however, results in close to 100% mortality if untreated and 10% if treated with antibiotics.<sup>172</sup> Q fever bacteria cells are shown in Figure 14.



**Figure 14. Q fever Bacteria, *Coxiella burnetii***

**Source:** GlobalSecurity.org, "Weapons of Mass Destruction (WMD): Q fever,"

[http://www.globalsecurity.org/wmd/intro/bio\\_qfever-pics.htm](http://www.globalsecurity.org/wmd/intro/bio_qfever-pics.htm) (accessed on June 7, 2010).

## THE DECEPTION

A biological weapon enables the attacker to conceal its identity and deceive the target in different ways and at different levels. For example, a cartel could take advantage of a biological agent's incubation time (time between exposure and symptom onset) and launch a biological attack that would not immediately attract attention. This gives the cartel the option of anonymity in order to avoid retaliation or amplify the population's fear of the unknown.<sup>173</sup> A biological weapon is perfect for someone who is

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<sup>172</sup> Vinod K. Dhawan, "Q Fever," eMedicine, under "Mortality/Morbidity," <http://emedicine.medscape.com/article/968146-overview> (access on June 9, 2010).

looking to deceive or confuse its target. Furthermore, a bioattack and a denial and deception operation (D&D) could complement each other very well.

### **D&D Defined**

D&D is composed of denial and deception. Denial is the act of concealing information that allows an adversary to learn a truth.<sup>174</sup> A denial operation blocks access to information channels. Examples of denial activities include using underground compounds to hide certain practices from technical or human surveillance and organizational communication security rules that discourage members from giving information to outsiders. Deception leads an adversary to believe something that is not true.<sup>175</sup> A denial and deception operation (D&D) guides an adversary away from the truth and towards a perception created by the deceiver. The deceiver manipulates the adversary's perception to lead him to act in a way that benefits the deceiver. In other circumstances, the deceiver may manipulate the adversary into doing nothing as opposed to a specific action. Thus, D&D can increase or decrease ambiguity. An M-Type (misleading) D&D operation reduces ambiguity because it leads a target to believe a specific story that is not true.<sup>176</sup> The target of an M-Type operation believes that it is gaining clarity. A deceiver will conduct an M-Type operation when it wants its target to

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<sup>173</sup> Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *First Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction: I. Assessing the Threat*, 11, <http://www.rand.org/nsrd/terrpanel/terror.pdf> (accessed on June 9, 2010).

<sup>174</sup> Roy Godson and James J. Wirtz, eds., *Strategic Denial and Deception: The Twenty-First Century Challenge* (New Brunswick: Transaction Publishers, 2008), 1.

<sup>175</sup> Ibid.

<sup>176</sup> Jon Latimer, *Deception in War* (Woodstock, NY: Overlook Press, 2001), 71-72.

act in a specific manner.<sup>177</sup> An A-Type (ambiguity) operation increases ambiguity and creates a more confusing picture for the target. A deceiver conducts an A-Type operation when it desires inaction from a target.<sup>178</sup>

D&D can be conducted at the strategic, operational, or tactical levels. Strategic D&D is designed to manipulate the actions of a nation, thus targets chiefs of state, policy makers, and military commanders.<sup>179</sup> Operational and tactical D&D is conducted at the operational and tactical levels to influence respective leaders, but an aggregate of operational or tactical D&D can also affect strategic-level leaders. This scenario will explore what strategic D&D performed by a non-state actor might look like.

Strategic D&D is generally too expensive and time consuming to be conducted at the non-state actor level. Complex criminal and terrorist organizations such as the Colombian Cali Cartel, the Irish Republican Army, and the U.S. and Sicilian mafias, however, have conducted D&D in the past.<sup>180</sup> Examples discussed throughout Chapter Three demonstrate that Mexican cartels have the resources, strategic mindset, and operational knowledge needed to conduct D&D. According to Godson and Wirtz, D&D allows criminals and terrorists to make their environments more conducive to accomplishing their illicit objectives.<sup>181</sup> Criminals and terrorists also use D&D to

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<sup>177</sup> Latimer, *Deception in War*, 71-72.

<sup>178</sup> Ibid.

<sup>179</sup> Abram Shulsky, *Strategic Denial and Deception: The Twenty-First Century Challenge*, ed. Roy Godson and James J. Wirtz, (New Brunswick: Transaction Publishers, 2008), 17.

<sup>180</sup> Godson and Wirtz, *Strategic Denial and Deception*, 6.

<sup>181</sup> Ibid., 2.

eliminate their rivals and mislead investigative efforts.<sup>182</sup> In this scenario, the cartel will use D&D to do both.

### **Levels of Covertness**

During a bioattack, the cartel could operate at four different levels of covertness. Each level is more complicated, requires more planning and resources, and gives the target a more defined, though inaccurate, picture of the attacker's identity, means, and motive. A visual representation is provided in Figure 15 on the following page. The Levels of Covertness are represented as a pyramid because each successive level builds on the previous one. Figure 15 also represents the principle that no deception can exist without baseline denial. This is illustrated with the yellow base of the 2<sup>nd</sup> Level. Yellow represents an operation that consists of all denial activities and no deception activities. As the pyramid changes to red, the operation maintains a baseline of denial activities but accumulates more deception activities.

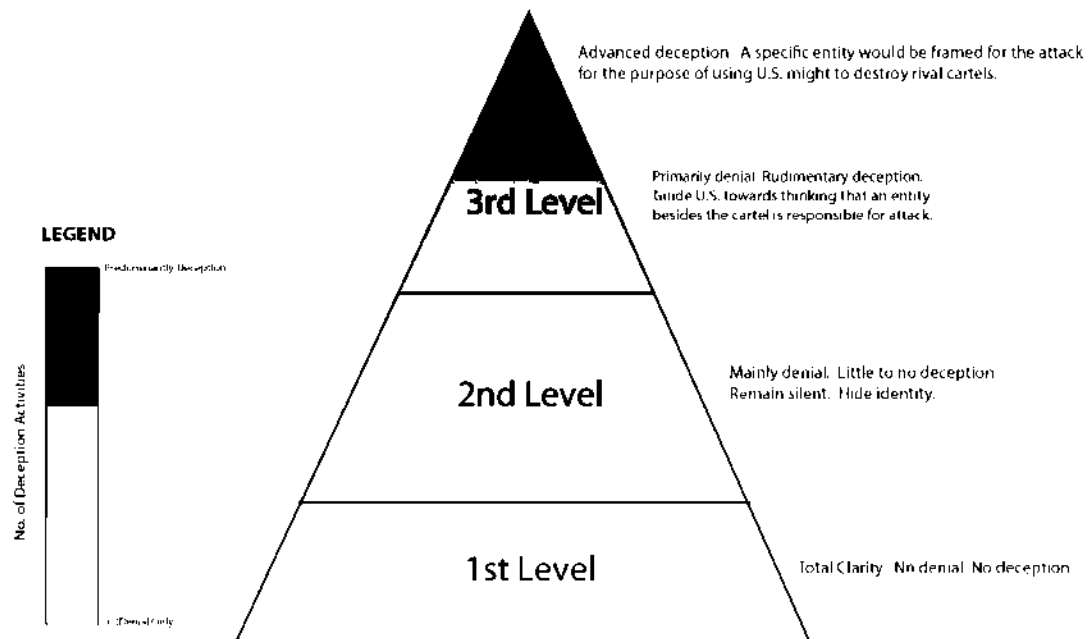
- The first level would involve no deception because the cartel would take credit for the attack. This action could be performed if the cartel believed that the power and respect gained from committing the bioattack would outweigh the risk involved with taking credit for it.

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<sup>182</sup> Godson and Wirtz, *Strategic Denial and Deception*, 6.



# Levels of Coverttness



**Figure 15. Levels of Coverttness**

- During the second level, the cartel could remain completely silent about the attack and not try to manipulate U.S. beliefs on the causes or identities of those behind the attack. Mainly denial would be conducted at this level. Almost no deception planning would be done at this level.
- In the third level of coverttness, the cartel would cause the United States to believe that someone other than the cartel was responsible for the attack. The cartel would work to hide their connections to the attack, and attempt to guide the United States towards blaming a specific, possibly imaginary, entity. Hunting imaginary groups would dilute law enforcement and intelligence ability to track down the responsible cartel. At this level, the cartel would perform primarily

denial activities along with some rudimentary deception activities. This would allow the attacker to reap all of the benefits and divert the bad consequences. Additionally, with this step the cartel is floating a balloon to gauge the mood of the public and the resolve of the government. Such information will help the cartel decide on its next step and whether or not to come out from the shadows and claim credit for the attack.

In addition to concealing the cartel's involvement with the attack, bioweapon production would be detached from the cartel. All of the logistics and administration needed to build the weapon could be grouped under an umbrella company that may appear as an entity separate from the cartel. Financial steps would be taken to ensure that the front company used to house the development would not lead to the cartel. Thus, if law enforcement traced the attack to the front company, it would then reach a dead end. Any company on the cartel's payroll could be used as a front company to plan the attack, design the weapon, and direct attention away from the cartel.

- In the fourth level of covertness, the cartel would frame a specific entity for the attack for the purpose of using U.S. power to destroy that entity. The cartel would need to perform advanced deception techniques to successfully accomplish this endeavor. The fourth level could help mitigate the risks of attacking such a formidable foe as the United States. Attacking the United States could produce unintended consequences, such as massive retaliation. The fourth level of covertness, however, could not only account for those unintended consequences, but also redirect the retaliation to the cartel's advantage.

## See-Think-Do

“See, Think, Do” describes a specific deception methodology that would be useful to a Mexican cartel aiming to deceive the United States. In the simplest terms, a deceiver makes an adversary *see* something that makes it *think* a certain way in order to make it *do* a specific action. A deceiver must, however, conceive of a See-Think-Do scenario backwards. The deceiver must plan what it wants the adversary to do, what thoughts or beliefs would cause the adversary to act in that specific way, and what it would want the adversary to see to make it have those thoughts or beliefs. This process is represented in Figure 16.

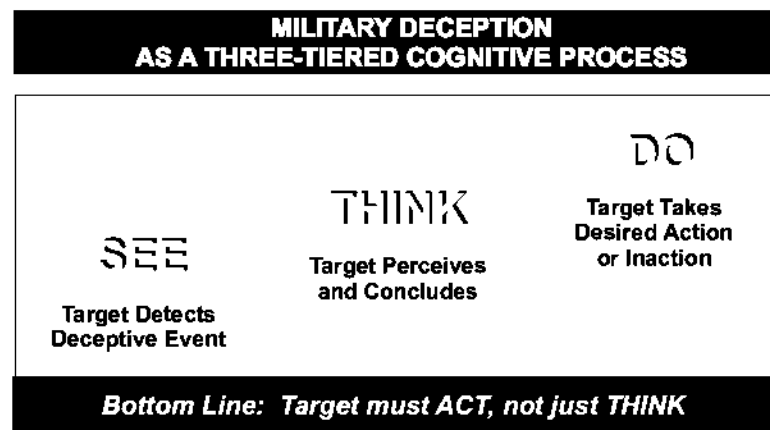


Figure 16. See-Think-Do Process

Source: U.S. Joint Chiefs of Staff, *Military Deception, Joint Publication 3-13.4* (Washington, D.C.: U.S. Joint Chiefs of Staff, July 13, 2006), IV-2, [www.information-retrieval.info/docs/jp3\\_13\\_4.pdf](http://www.information-retrieval.info/docs/jp3_13_4.pdf) (accessed on June 9, 2010).

To conduct a See-Think-Do operation, the deceiver must realize its goals and objectives. A deceiver’s goal describes how D&D will help accomplish the deceiver’s

ultimate mission.<sup>183</sup> A deceiver's objective outlines the actions that it desires the adversary to take in reaction to the D&D. The objective must be in support of the deceiver's goal. The goal of the cartel behind the bioattack is not only to make Mexico a more conducive place to traffic drugs but also to increase its own standing and power by reducing the level of U.S. involvement in the Mexican drug war. The goal of the D&D is to protect the cartel by confusing or misdirecting the United States on the identity of the attacker. If the bioattack causes the United States to become more involved, then a See-Think-Do operation would help concentrate that involvement on the cartel's rivals. A cartel could use D&D to frame another cartel for the bioattack on the United States. The United States would then direct its retaliatory attack against the framed cartel, thereby helping the responsible cartel destroy its rivals. Thus, the objective of the cartel's D&D is to keep the United States from attacking the cartel and to attack rival cartels to further its goal of increasing its power and position.

Precedence for this action is called "heating up the plaza".<sup>184</sup> On March 14, 2010, drive-by shooters targeted, chased, and killed three employees of the U.S. Consulate in Juarez.<sup>185</sup> On April 11, 2010, assailants tossed a grenade into the U.S. Consulate in Nuevo Laredo. Mexican interior minister, Fernando Gómez Mont said that these are examples of increasingly sophisticated techniques designed to lure U.S. and Mexican law enforcement and military forces into a specific area to weaken rival cartels. "Heating up

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<sup>183</sup> U.S. Joint Chiefs of Staff, *Military Deception, Joint Publication 3-13.4*, IV-3.

<sup>184</sup> William Booth, "Drug War Violence Appears in Mexico's Northeast, Near Texas Border," *Washington Post*, April 21, 2010. <http://www.washingtonpost.com/wp-dyn/content/article/2010/04/20/AR2010042004961.html> (accessed on June 9, 2010).

<sup>185</sup> Mariano Castillo and Jamie Crawford, "3 People Associated with U.S. Consulate Killed in Mexico," *CNN*, March 15, 2010, <http://edition.cnn.com/2010/WORLD/americas/03/14/mexico.violence/?hpt=TI&imw=Y> (accessed on June 10, 2010).

the plaza” is slang for luring law enforcement into an area and framing someone else for the provocation. A plaza is a trafficking route into the United States.<sup>186</sup>

### **A Deceptive Environment**

Mexico is the perfect environment to conduct D&D. Furthermore, the current condition of Mexico provides a cartel with the perfect topography to hide its connection to a bioattack and blame another cartel. There are several factors now endemic to Mexico that were created by the cartels and the drug war that enhance a cartel’s ability to conduct D&D. To begin with, the drug war provides ample background noise into which a cartel can blend. It is difficult for law enforcement and intelligence entities to track cartel activities in such a disruptive environment. The fog of war is now a factor due to prolonged confrontations between the military and the cartels. Assigning accountability for crimes is secondary to ending the violence and destruction. Many leads wind up in dead ends either because cartels are concealing their activities or because the military has destroyed or killed evidence and sources. The difficulty of uncovering cartel D&D is compounded by the fact that cartels often operate in urban environments and slums. Scott Gerwehr and Russell W. Glenn point out that the scope of deceptions is greater in urban centers and urban background noise further degrade counterdeception practices.<sup>187</sup>

Gerwehr and Glenn also point out that noncombatants further complicate matters.<sup>188</sup> The noncombatant situation in Mexico is even more severe due to

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<sup>186</sup> Booth, “Drug War Violence Appears.”

<sup>187</sup> Scott Gerwehr and Russell W. Glenn, *The Art of Darkness: Deception and Urban Operations* (Santa Monica, CA: RAND, 2000), xii.

<sup>188</sup> Ibid.

corruption's prevalence. A cartel can control regular people on the street and people in high levels of business, government, military, and intelligence. For example, the Beltran Leyva Organization headed a corruption racket that used high level members of the Mexican attorney general's office and the federal police, to include the head of the organized crime unit.<sup>189</sup> Additionally, in the summer of 2008, a U.S.-Mexico joint operation arrested a dozen high-ranking Mexican federal police officials, including the drug czar, for spying for the Sinaloa cartel.<sup>190</sup> In fact, government corruption is so rampant that Mexican officials are no longer allowed to participate in many U.S.-led counter-smuggling efforts because of concerns about leaks and spying.<sup>191</sup> Such corruption is not only conducive to criminal activity but can also conceal how criminal activity is conducted and who is responsible. In general, the Mexican cartels exercise considerable control over the government channels in Mexico. Such control would allow the cartel behind the bioattack to hide its biological weapon and point U.S. and Mexican national security efforts in the direction of another cartel.

Overall, Mexican law enforcement capabilities are too overwhelmed and spread too thin to decipher D&D and discover who was responsible for a bioattack. Corruption in every facet of Mexican government and civilian life weakens law enforcement investigative capabilities. Investigations are also hindered by military operations, the destruction of the drug war, and the sheer number of crimes and murders.

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<sup>189</sup> William Booth and Steve Fainaru, "Mexican Drug Lord Killed in Gunfight with Federal Forces," *Washington Post*, December 18, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/12/17/AR2009121700260.html> (accessed on June 11, 2010).

<sup>190</sup> MSNBC, "U.S. Gives Mexico \$197 Million to Battle Cartels," <http://www.msnbc.msn.com/id/28039287/> (accessed on June 11, 2010).

<sup>191</sup> Gregory David, "The Hidden Threat to U.S. National Security: Human Smuggling Networks" (master's thesis, National Defense Intelligence College, 2004), 57.

Another hindrance to unscrambling cartel D&D is the constantly transforming composition of a cartel. Alliances are constantly forming and dissolving between cartels. Members are constantly switching sides or working for multiple cartels. Numerous examples exist. The Sinaloa Cartel was allied with the Beltran Leyva Organization, and then began battling each other. In the past, Los Zetas have been part of the Gulf Cartel, allied with the Beltran Leyva Organization, then on their own, fighting the Gulf Cartel and Beltran Leyva organization. Members of the Juarez and Tijuana cartels have joined the Sinaloa Cartel. These instances can be found in Chapter Three from pages 63 to 66. Such personnel movement between cartels makes it difficult to discern who is presently working with whom. A cartel could use such fluidity to mask its involvement in developing and launching a biological weapon. Additionally, the personnel transfers make it easier for a cartel to frame another cartel for the bioattack.

## **THE LAB**

The cartel's attack and deception plans will converge with the invention of a front company. This company can be used to develop the bioweapon and serve as the nexus that connects a framed entity to the biological attack. This company will have several characteristics that make it effective as a research lab and a means for embodying the cartel's D&D.

The legitimate portion of this business will disguise the bioweapon development portion. The cartel will have a myriad of businesses in numerous industries to choose from. The Sinaloa cartel employs directly or indirectly 520,000 of the 2.6 million

residents of the Sinaloa state.<sup>192</sup> Connected businesses include day care centers, car dealerships, meat packing plants, stables, dairies, hotels, and mining companies.<sup>193</sup> An ideal business would be one in the medical, veterinarian, or animal health industry where the presence of dual use biological equipment would not be unusual. This would allow a technician to develop and prepare the biological weapon without raising any alarms. For the sake of this scenario, a livestock veterinarian clinic will be used. Ample space and equipment will then be available.

For D&D purposes this lab should be located in territory that is being disputed by several cartels. The lab could alternatively be located within the cartel's own undisputed territory to reduce the risk of harassment from other cartels, but it would then be more difficult for the cartel to deny connections with the lab if it was ever discovered. By locating this lab in disputed territory, the responsible cartel could shift the perception of ownership to another cartel when appropriate.

The clinic will only employ a skeleton crew. A small number of employees is an operational security (OPSEC) measure designed to prevent leaks about the bioweapon and the true ownership of the clinic. While a large number of employees also has its own OPSEC benefits, such as more effective compartmentalization to prevent any one person from acquiring too much information, for the sake of this scenario only a small number will be employed at the front company. Fewer people are easier to track and leaks would be easier to trace back to the leaker. Additionally, it would be cheaper to pay the employees and their families to remain silent. Besides the technicians involved in

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<sup>192</sup> Chris Hawley, "Drug Cartels Threaten Mexican Stability," *USA Today*, February 2, 2010, under "Banks, stables, hotels," [http://www.usatoday.com/news/washington/2010-02-10-mexico-cartels\\_N.htm](http://www.usatoday.com/news/washington/2010-02-10-mexico-cartels_N.htm) (accessed on June 11, 2010).

<sup>193</sup> Ibid.



developing the weapon, no one will have knowledge of the weapon. OPSEC dictates that even the technicians will have limited knowledge of the operation and the administration of the clinic/lab. Those that do work on the clinic side or are responsible for the criminal front aspect of the clinic should have ties with other cartels. The cartel liaison to the front, who oversees the criminal interests and finances of the business, the one who signs the checks so to speak, should especially have worked previously with another cartel. These ties will exploit the morphing nature of the cartels and point investigators who are following the operational funding in the direction of another cartel. For OPSEC reasons, the cartel liaison should have little access to the bioweapon side of the business, in spite of his position.

Additional steps to enhance the D&D that do not involve the front company could be taken leading up to the attack. The cartel could move dependable sources in the Mexican federal government; especially in the military, intelligence, and law enforcement fields; into strategic positions that will be able to liaison with U.S. intelligence and law enforcement to pass false information pinning a rival cartel for the bioattack. With conduits in place to send false information to U.S. intelligence, the cartel can choose if and when to initiate its D&D at any point during the attack. To preserve OPSEC, intelligence passed to cartel sources will not be attributable to the cartel.

If the cartel was dedicated to the D&D from the outset of the attack, then bits of information could be sent prior to the attack. Even evidence, such as reports of infected livestock could be sent through the cartel's government channels. To increase the legitimacy of the D&D, just before the attack, an infected employee of the clinic could report to government sources and expose the bioweapon lab. By this time, the attackers

would already be staging or dispersing the bioweapon and the lab would no longer be used. The employee had no idea who he truly worked for and all of the D&D traps in place would attribute the lab to the rival cartel. This would trigger the D&D but close access to the other levels of covertness.

### **Exploitation of U.S. Biodefense Expansion to Obtain a Bioweapon Scientist**

As mentioned in the previous chapter, a cartel would have the ability to afford any bioweapon researcher but would not need to since the biological weapon development process has been said to be as difficult as making beer.<sup>194</sup> There is, however, a growing source from which a cartel could pluck a bioweapon scientist: the U.S. biodefense industry. A quick review of the figures that were introduced in Chapter Two:

- the number of BSL-4 labs has grown from five before 2001 to an estimated fifteen by 2012;<sup>195</sup>
- the exact number of labs that handle BSL-3 level pathogens is unknown but has greatly expanded since 9/11;<sup>196</sup>
- at least 15,000 scientists and technicians work in U.S. BSL-3 and BSL-4 labs.<sup>197</sup>

These steps have all been taken in an attempt to make the United States safer from a biological weapon and to decrease the odds of a successful bioattack. However, it can

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<sup>194</sup> Jane's CBRN Assessments, "Biological Warfare: a Net Assessment," Jane's, under "The NEWS of offensive BW," [https://www.opensource.gov/providers/janes/www8/JDIC/JCBRN/documentView.do?docId=/content1/janesdata/binder/jcbrn/jcbw5007.htm@current&pageSelected=&keyword=&backPath=http://jcbrn.janes.com/JDIC/JCBRN&Prod\\_Name=JCBRN&activeNav=http://www8.janes.com/JDIC/JCBRN](https://www.opensource.gov/providers/janes/www8/JDIC/JCBRN/documentView.do?docId=/content1/janesdata/binder/jcbrn/jcbw5007.htm@current&pageSelected=&keyword=&backPath=http://jcbrn.janes.com/JDIC/JCBRN&Prod_Name=JCBRN&activeNav=http://www8.janes.com/JDIC/JCBRN) (accessed through Opensource.gov on June 11, 2010).

<sup>195</sup> *World at Risk*, 25.

<sup>196</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 14.

<sup>197</sup> *Ibid.*

be argued that the proliferation of biowapon expertise and technology has made the United States more vulnerable to a biological attack. The logic of defending the United States against a biological weapon by building a massive national biowapon infrastructure is akin to the Cold War logic of keeping the United States safe against a Soviet nuclear attack by building thousands of nuclear warheads. As a result, a reactive build up of nuclear arsenals by the Soviets and Americans produced tens of thousands of nuclear weapons and arguably increased the likelihood of a nuclear war instead of decreased it. Similarly, this bioweapon proliferation could also increase the likelihood of a bioattack.

Additionally, by training thousands of people in bioweapon development, the United States has taken steps to increase the potential lethality of a future bioattack. Before, America's enemies had to discover the ways to build an effective bioweapon on their own through trial and error. The chances of building a perfect weapon that would perform as expected were relatively small. By recruiting a technician from the U.S. biodefense industry, however, the performance is likely to increase and this technician could use the nuances of his expertise to overcome difficulties and reach possibilities that a group had not considered. The end product could then be a weapon that the attacking organization had not even dreamt of.

In a way, this present situation could even be worse than the Cold War nuclear situation. Unlike nuclear weapons, the general population can access dual-use technology to produce a biological weapon. This technology is becoming more accessible as time goes on. A 2001 study showed that the equipment to make dry anthrax is continually becoming cheaper and the risk of unauthorized use of civilian facilities is

constantly growing.<sup>198</sup> To worsen matters, it is difficult to discover and trace missing amounts of pathogens from a lab's stockpile in spite CDC efforts to force labs in the United States register their pathogen stockpiles.<sup>199</sup> Thus, not only could a narco-terrorist organization recruit a bioweapon developer from the biodefense industry, but this recruit could easily acquire the desired biological agents for the organization without anyone ever knowing.

This protection-through-proliferation mentality appears more misguided when considering the FBI's Amerithrax case. At one time or another during the investigation, the primary suspects were biodefense scientists, Stephen Hatfill and Bruce Ivins. In spite of their innocence or inconclusive guilt, the fact that leads kept taking the investigation to biodefense scientists should illustrate the danger of a widespread biodefense industry. Such instances should also demonstrate that these scientists serve as a possible source of developers for narco-terrorists and represent a vulnerability to the national security of the United States. Vastly increasing the numbers of the people in this field increases the chances of hiring people who have the potential and possibly the desire to harm the United States.

To highlight the vulnerability of the expansion of the U.S. biodefense field, the cartel in this scenario will pay for the services of a technician from a BSL-3 facility. The status and activities of a BSL-3 lab are inadequately tracked, especially when compared to the pathogens that it could possibly contain. Present oversight programs rely on lab personnel monitoring themselves and reporting any infractions to government

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<sup>198</sup> Cordesman, *Challenge of Biological Terrorism*, 39.

<sup>199</sup> Jeffrey R. Ryan and Jan F. Glarum, *Biosecurity and Bioterrorism* (Amsterdam: Butterworth-Heinemann, 2008), 215.

agencies.<sup>200</sup> This arrangement allows for a greater likelihood of security breaches and abuses than does the existence of a separate security apparatus that would be responsible for monitoring and reporting of lab activities. The fact that no federal agency is mandated to track the expansion of BSL-3 or 4 labs and that it is nearly impossible to trace the pathogenic inventory of these labs means that future security lapses are bound to happen.<sup>201</sup> Such poor oversight and security would enable cartel members to initiate contact with a lab worker and allow the lab worker to acquire agents and equipment from his lab of employment without the lab's knowledge.

### **Deception and Weapon Development Timeframe**

The cartel's technician would conceive of the bioweapon dispersal method, possibly by traveling to the United States to research different methods and investigate U.S. vulnerabilities. The technician could also acquire the seed stock for the bioagent. Based on previous weapon suitability tests, the technician would choose tularemia, pneumonic plague, and Q fever (all of which can be acquired in a BSL-3 lab). Once the bioagents were acquired, they would be cultured, concentrated, dried, milled, and prepared at the veterinarian clinic. The agents would then be field tested on livestock. The dispersal weapons would then be filled and stored until the attack.<sup>202</sup>

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<sup>200</sup> U.S. Congress, Senate, Committee on the Judiciary, Subcommittee on Terrorism and Homeland Security, *High-Containment Laboratories: National Strategy for Oversight is Needed*, 111 Cong., 1<sup>st</sup> sess., September 22, 2009, 4, <http://www.gao.gov/new.items/d091045t.pdf> (accessed on June 14, 2009).

<sup>201</sup> U.S. Congress, Senate, Committee on the Judiciary, Subcommittee on Terrorism and Homeland Security, *High-Containment Laboratories: National Strategy for Oversight is Needed*, 111 Cong., 1<sup>st</sup> sess., September 22, 2009, 3, <http://www.gao.gov/new.items/d091045t.pdf> (accessed on June 14, 2009).

<sup>202</sup> U.S. Congressional Research Service, *Small-scale Terrorist Attacks*, 15.

The timeframe for the build-up to the attack must be considered. A year, maybe longer, would be needed to insert sources into proper government positions. The cartel would need to select the weapon developer about a year before the attack because it would take that long to find the right front company, assemble a staff with appropriate histories, build an adequate lab, and research and develop the bioweapon. In all, planning and preparation for this attack would require approximately one year.

## **THE ATTACK**

Based on his research into dispersal methods, the cartel's bioweapon developer conceived of a way to spread the bioweapon that minimizes exposure of the attackers to the agent, preserves the attackers' and the cartel's anonymity, and does not require the presence of an attacker at the time of the bioweapon dispersal. The developer decided to use automatic air fresheners commonly found in public bathrooms that intermittently spray a mist. The developer discovered how to modify the aerosol refills to hold and disperse the bioagent.<sup>203</sup> Such deodorizers include the Rubbermaid Technical Concepts

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<sup>203</sup> Dispersal method derived from Red Cell Assessment of Biological Attacks on the United States. Conducted at George Mason University's National Center for Biodefense, 2007.

Microburst 3000 Dispenser (an example of which is in Figure 17) and the AutoFresh



**Figure 17. Microburst 3000 Air Freshener Dispenser**

*Source:* Air Delights, “Microburst 3000 Air Freshener & Air Neutralizer,”

<http://www.airdelights.com/microburst-3000-air-freshener.html> (accessed on June 11, 2010).

Select Aerosol Air Neutralizer. These deodorizers have customizable dispensing intervals and durations. A deodorizer that is set to spray every seven minutes for 24 hours per day, seven days per week will last for fifteen days before it needs to be refilled. Meanwhile, a deodorizer that is set to spray every 28 minutes for twelve hours per day, five days per week will last 168 days before it needs to be refilled. Settings in between these extremes are also available.<sup>204</sup>

The attack will be simple: go into the target areas and install the bioagent-loaded refills into the deodorizers then leave. The attackers must ensure that the refill fits the deodorizer. It is highly recommended, but not imperative, that no one observes the perpetrator replacing the refills. The perpetrators can wear janitorial clothing to provide cover in case they are seen changing the refills.

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<sup>204</sup> Air Delights, “Microburst 3000 Aerosol Dispenser, with Proactive Display LCD,” [http://www.airdelights.com/specification/401219\\_MB3000\\_spec\\_sheet.pdf](http://www.airdelights.com/specification/401219_MB3000_spec_sheet.pdf) (accessed on June 11, 2010).

For purposes of OPSEC, the perpetrators who find the strategic locations and install the refill containers will enter the country first without the biological agent. The couriers carrying the aerosol refills will then be sent across the border. To avoid suspicion, each courier and their car will have a clean record and carry four or five refill canisters. The couriers will have no idea what's in the refills and will assume that it's drugs. Therefore, if any couriers are caught, then they will not be able to divulge sensitive plan information. Once across the border, the couriers will meet with the perpetrators and hand off the containers.

The developer prepared thirty refills (ten of pneumonic plague, ten of Q fever, and ten of tularemia) to be placed in strategic locations throughout the United States. Dispersal across the entire country would cause the United States to believe that it is under a comprehensive, large-scale attack. Metropolitan or rural areas are viable targets, as long as the attackers pick buildings with frequently used restrooms. It will be best to pick small bathrooms that are frequently used. When picking an appropriate restroom, the installers must also consider ease of installation and the likelihood of an unobserved installation.

Ideal targets include airports, schools, restaurants, and stadiums. These locations would be easily accessible and able to infect the most people. The attackers would make the most efficient use of their agent and maximize their cost/benefit basis relative to being caught or accomplishing the mission.

The attackers have the potential to cause the most fatalities, damage, and fear by targeting airports. Many people would become infected due to the high traffic of airports.



Since these infections are contagious, people flying to other parts of the world could spread the diseases to other countries.

Targeting schools could also have a cataclysmic effect. Infecting children would scare the public more and put more pressure on the government to stop the attack, including by cutting back involvement in the drug war. Attacks on schools would put people in the position to weigh their stances on the drug war against their children's lives. It is plausible that the children's lives would be considered more valuable.

Restaurants would be the easiest targets. An attacker could visit the restroom and install a bioweapon container while having a meal. If an attacker chose a busy fast food restaurant, then he could walk into a side entrance away from the order counter, go into the restroom, install the canister, and be back out in three minutes.

Stadiums may be the riskiest locations in terms of infecting people and getting caught. Stadiums are ideal targets because, during a sporting event, a high concentration of people is present over a short duration. An attacker would be attracted by the opportunity to infect many people at once. The short duration of the games and the span of days between sporting events, however, will cause much of the bioagent to be sprayed while no one is inside the stadium. Bag checks at the gate and the heightened presence of security throughout the stadium also raise the chances of having a canister confiscated or being caught during installation. Paying a stadium employee or using an insider, however, could circumvent this risk.

At any point throughout the attack, the cartel has the option to remain silent, blame an imaginary group, take credit for attack, or expose the front company to frame

another cartel. The manner of conducting the attack will be decided upon based on motivations, goals, and dynamics of the attack.

As witnessed during the 2001 attack, ignorance about the attacker's identity, motive, demands, and plans amplified the fear. Silence from the attacker added fear of the unknown to the fear of being infected. The cartel could also remain silent throughout the attack. The cartel's silence would let the infections spread, the fear to take hold of the population, and the cartel remain anonymous. If the cartel remains silent, then the attack will be discovered because of the large numbers of infected people. The cause of the outbreak will be initially difficult to attribute to a bioattack. The cause of the outbreaks will probably be more difficult to identify as a bioattack than the 2001 anthrax attacks because there will be no warning such as the threat letters that accompanied the anthrax powder.

Alternatively, once the population's fear of the unknown has stabilized, the perpetrators can correspond with the media over the phone, through e-mail, or through the mail. This action can elicit fear of future events. Correspondence can take place over weeks or months. The perpetrators can provide such information as: identity, demands, motivation, and attack plans. The information can be true or false and can provide varying levels of specificity.

Regarding identity, the perpetrators can provide the names of imaginary groups that have imaginary demands and motivations. Furthermore, the perpetrators can make it appear that the United States is being attacked by several unconnected groups. This illusion would be enhanced by the use of the different bioagents. For example, a false Islamic group could use pneumonic plague, an imaginary al Qaeda cell could use

tularemia, and an invented right-wing militia group could use Q fever. The use of Islamic terrorism ties would take advantage of U.S. beliefs that Middle Eastern terrorist organizations are the front-running non-state threat to launch a biological attack. Such nationwide biases and self-deceptive beliefs would allow the cartel to preserve its anonymity. Additionally, the U.S. government may divert resources from fighting the drug war to hunting those responsible for the attack and preventing a similar future attack. This option, however, is no longer viable once investigators discover that each bioagent was dispersed using the same deodorizer method. It would be implausible that such dissimilar groups would use the same dispersal method.

Regarding attack plans, the perpetrators could spread mass confusion by relaying attack plans that are inconsistent with the attacks or could spread paranoia and fear by accurately forecasting the location of the next attack. To build credibility the perpetrators could even reveal the agent that will be used. That credibility would then make the U.S. public or government more vulnerable to deception, even far-fetched lies, in the future.

The cartel could claim credit for the attack at a point after the attack has unfolded. The cartel boss would only do so when he feels that he can gauge the United States' disposition and predict the U.S. government's reactions to the bioattack. This could intimidate the U.S. population, cause a loss of political will, and a partial withdrawal from the Mexican drug war, or at least a reassessment of U.S. policies towards the Mexican drug war. The threat of additional biological attacks could augment these effects. This action would also increase the cartel's status, display its might, and show its enemies that it should be given a wide berth.

To destroy rivals, the cartel could trigger the D&D contingencies that are in place. Evidence of infections and Mexican intelligence reports would point to the cartel's enemies. U.S. retaliatory actions would then target those enemy organizations. The cartel could even provide support to the United States similar to when the Northern Alliance in Afghanistan supported the United States in destroying the Taliban.

## **CONCLUSION**

The anthrax attacks showed the amount of fear that the act of using a biological weapon can cause. It was not the effects that caused the fear but the act itself and the fear that is already built into one's mind at the threat of being a victim of a biological attack. The tangible effects of the anthrax attacks were minimal: five people dead, seventeen injured, and, besides contamination, no massive physical destruction. Relative to the tangible effects of the 2001 attack, a disproportionate amount of terror was caused.

This scenario aimed to amplify the principles of fear that were revealed by the 2001 attacks. This attack emulated such qualities of the 2001 attack as using multiple phases and retaining the option of limiting communication to make the population fear the unknown by keeping it ignorant about the attacker's identity and motivation and the attack's targets and duration. To generate terror beyond that caused in 2001, this scenario also included the use of different biological agents and outlined a communication plan designed to further panic and confuse the population.

The purpose of this scenario is to illustrate the capability and danger of a Mexican drug cartel. Furthermore, this demonstrates that the United States is extremely vulnerable

to such a simple bioattack. The United States would not only be helpless to prevent such an attack, but would have a difficult time tracking down the perpetrator, especially one that has the resources and knowledge to cover its tracks.

Any Mexican drug cartel could attack the United States for a variety of reasons to accomplish a variety of goals. Within the attack, a cartel could implement different strategies and tactics to wield various weapons. As this scenario reached its culmination, it traveled down specific corridors. Along the way, it passed by alternate corridors of equal likelihood. This scenario is only one path of many in a labyrinth of possibilities that outlines the characteristics of a cartel bioattack on the United States.

The likeliest manner of attack by a cartel on the United States can be argued. What can not be argued is that a cartel is capable of planning and executing every facet of this scenario. Moreover, cartels are only becoming more sophisticated while bioweapons are becoming easier to develop. Thus, as time goes by, scenarios like this one become more plausible.

## **CHAPTER 5**

### **Tracing Trajectories**

#### **INTRODUCTION**

The trajectories of cartel activities are the primary warning signs that the United States may be the target of a biological attack. Specifically, if any cartel is becoming more violent, more desperate, or more sophisticated, then it would become a greater threat to launch a biological weapon. In an attempt to account for possible sources of bioweapon developers inside Mexico, the United States Intelligence Community (USIC) should research any connections between doctors of veterinary medicine (DVM) and the cartels. Furthermore, the United States should be alarmed if any cartel patterns its activities after other organizations that have attempted to launch bioweapon attacks, especially the Aum Shinrikyo cult, which had comparable resources to that of a cartel and had an extended record of attempting to develop and use biological weapons. The United States should also consider whether its own actions will provoke an attack from a cartel. Increased U.S. involvement in the Mexican drug war could motivate a cartel to conduct a biological attack to force the United States to withdraw. Any indications or warnings that the (USIC) acquires leading up to or during a biological attack should undergo counter-D&D analysis since a biological weapon is an ideal weapon to use in coordination with D&D and the amount of corruption and criminal activity in Mexico makes for the perfect environment to stage D&D.

One way to analyze whether an organization is a threat to use a biological weapon is to focus on the obstacles that prevent it from using one. The fewer barriers that prevent an organization from using a bioweapon then the more likely it is to use one. If an organization has no barriers, to include moral and technological, then all it needs is intent. A problem, however, arises when trying to discern whether an organization is no longer constrained from using a biological weapon. When is it apparent that the group crossed the threshold where a biological weapon becomes an option? Where has that line in the sand been drawn, if at all?

### **INCREASED RUTHLESSNESS**

As demonstrated by the numbers of people that they have killed, the Mexican cartels are extremely violent. Indications, such as increased violence against uninvolved civilians and escalating torture and mutilation, show that the cartels are growing more vicious (refer to Chapter Three from pages 74 to 77 for more details). The question, however, becomes are the Mexican cartels ruthless enough to use a biological weapon. A tactic that the cartels have generally avoided is the use of explosives to kill masses of people, such as the use of improvised explosive devices (IEDs) in Iraq. The use of IED-type weapons, especially against civilians, could be a sign that the cartels are moving closer to removing any constraints from using a biological weapon, if they had any before. Conversely, the Japanese cult, Aum Shinrikyo, circumvented the use of

explosives entirely on its way to using chemical and biological weapons.<sup>205</sup> Thus, the use of a biological weapon may not be predicated upon the use of explosives.

The USIC should also be conscientious of activities that would trigger the cartels to become more violent. Increased U.S. involvement in the drug war could cause more violent strikes in Mexico and the United States. This is especially true if increased U.S. involvement results in effective military, intelligence, and law enforcement efforts that are dismantling the cartels or disrupting business. Such efforts could make a desperate cartel leader resort to extreme measures, such as launching a bioattack, to save himself or his cartel.

To gauge a cartel leader's mindset and to determine whether one is potentially ruthless and intelligent enough to use a biological weapon, it could be beneficial to explore what psychological indicators exist. Psychological interviews of cartel bosses that are in U.S. custody could provide insight into the mind of a cartel head and the likelihood of whether one would resort to a biological attack. Indicators could be derived from these interviews that would predict when a cartel leader is becoming hostile, desperate, or ambitious enough to take on the United States by launching a biological attack. This research would be similar to the interviews conducted by the FBI's Behavioral Science Unit of incarcerated serial killers. Such research revealed common psychological motivations and triggers of serial killers and provided the means to predict a serial killer's next step based on his present actions.<sup>206</sup>

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<sup>205</sup> Stratfor, "Al Qaeda and the Threat of Chemical and Biological Weapons," [https://www.opensource.gov/providers/stratfor/www/al\\_qaeda\\_and\\_threat\\_chemical\\_and\\_biological\\_weapons](https://www.opensource.gov/providers/stratfor/www/al_qaeda_and_threat_chemical_and_biological_weapons) (accessed through [www.opensource.gov](http://www.opensource.gov) on June 12, 2010).

<sup>206</sup> Instances of this research can be found in: John Douglas, *Mindhunter* (New York: Pocket Books, 1995).



Other indicators could exist that the United States is the target of a biological attack by a Mexican cartel. An increase in attacks against Americans in Mexico could be one such indicator. Several instances, including the killing of three U.S. Consulate employees stationed in Juarez and a grenade explosion within the U.S. Consulate located in Nuevo Laredo show that Americans have already been targeted.<sup>207</sup> Too little time has passed to determine whether or not these were isolated events or the beginning of a trend. An increase in the number of attacks on Americans and escalating violence should serve as a warning to the USIC and possibly a precursor of things to come. Violence against Americans abroad could lead to cartel violence against Americans within the United States. An increasing number of incidents of small-scale violence on the U.S. side of the border has already caused border state and city governments to call for the national guard and create special police task forces.<sup>208</sup> These incidents, however, have occurred in the course of conducting drug-related business as opposed to violence that targets U.S. citizens. Targeting and killing citizens within the United States because of their U.S. citizenship could indicate that a cartel intends to initiate a larger scale attack.

## **INCREASED SOPHISTICATION**

Determining the level of sophistication required to conduct a biological attack encounters the same problem as determining the required level of ruthlessness. When

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<sup>207</sup> Castillo and Crawford, "3 People Associated with U.S. Consulate Killed;" Booth, "Drug War Violence Appears."

<sup>208</sup> 24-7 Press Release, "Mexican Drug Cartel Violence Spills over Border," <http://www.24-7pressrelease.com/press-release/mexican-drug-cartel-violence-spills-over-border-100729.php> (accessed on June 12, 2010).

does an organization become sophisticated enough to be a threat to use a biological weapon? The Mexican cartels have more capabilities required to launch a biological attack than most other non-state actors. Some might question, however, if the cartels are sophisticated enough to use a biological weapon. In other words, will one of them use its capabilities in a more advanced and strategic way?

The cartels have already shown the ability to evolve and survive under constant law enforcement pressure. That evolution has led to a more sophisticated implementation of technology and weapons. For example, instead of traditionally posting banners in visible areas to convey their messages and warnings, some cartels now communicate with the public through Facebook and Twitter. These modes of communication have been used to aid in kidnappings, terrorize urban population bases, and hunt down enemies, all while more effectively evading law enforcement traps and tripwires.<sup>209</sup> Furthermore, the cartels have shown their ability to adapt their financial and drug trafficking operations to remain successful in the face of more sophisticated law enforcement efforts. Recently, cartels have employed tactics to combat government forces that include blocking highways, busy downtown thoroughfares, and international bridges with stolen vehicles to create congestion and inhibit police and military mobility. Additionally, cartel members have conducted prison raids that required complex planning and logistical arrangements.<sup>210</sup>

The organizational structure of cartels have even adapted to increased government pressure. To become more efficient and resilient, “the cartels are splintering and then

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<sup>209</sup> Alexis Okcowo, “To Battle Cartels, Mexico Weighs Twitter Crackdown,” *Time*, April 14, 2010, <http://www.time.com/time/world/article/0,8599,1981607,00.html> (accessed on June 12, 2010).

<sup>210</sup> Booth, “Drug War Violence Appears.”

rapidly reassembling into increasingly resourceful criminal enterprises, capable of penetrating and corrupting government and society.”<sup>211</sup> U.S. policymakers and USIC members should ask if military pressure is a catalyst that accelerates cartel evolution into more sophisticated entities. Signs of this would include testing new operational techniques, becoming more strategically focused, or developing new tactics.

If the situation dictated that the use of a biological weapon was necessary or beneficial, then the cartels’ capabilities would allow them to make that adaptation. If they are not already sophisticated enough to use a biological weapon, then a continued upward trend of more sophisticated tactics and strategic planning might indicate that a cartel has become advanced enough to coordinate the development and deployment of a biological weapon.

### **VETERINARIANS: BIOWEAPON DEVELOPERS**

Regarding other potential sources of bioweapon scientists, it would be prudent to track the activities of Mexican DVM’s. The scenario in this thesis used a livestock veterinarian clinic as the bioweapon development lab. The knowledge and expertise of a DVM would be very useful when developing and testing a biological weapon. Additionally, U.S. biodefense labs are composed of a large number of DVM’s, which is logical since livestock is a reservoir for many pathogens and is a vulnerable target for a bioterror attack. These facts also make it plausible that many U.S. DVM’s who are not in the biodefense field have received a certain amount of bioterrorism awareness training.

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<sup>211</sup> Fainaru and Booth, “Mexican Cartel’s Swift and Grisly Climb.”

Mexican DVM's may have also held similar biodefense positions and received similar bioterrorism awareness training. As previously mentioned, such proficiency with animals and pathogens would be very valuable to a cartel that wishes to develop a biological weapon. Thus, it would be sensible to search for any affiliations between DVM's and cartels and to discern the nature of any such affiliations.

### **THE AUM SHINRIKYO PRECEDENT**

Indicators of bioweapon development or use should be based on previous steps taken by other organizations that have attempted to acquire, develop, or use a biological weapon. Aum Shinrikyo, the Japanese cult that killed twelve people in a sarin attack on the Tokyo subway system in March 1995, would be one of the most relative organizations to derive possible indicators from since it had financial resources and capabilities comparable to the Mexican cartels.<sup>212</sup> In a testimony after the attack, a high level cult member stated that Aum Shinrikyo's net worth was approximately \$1.5 billion.<sup>213</sup> Additionally, Aum Shinrikyo is relevant towards discerning a cartel's attempt to use a bioweapon because it was extremely sophisticated, and attempted to launch a biological attack several times. Aum Shinrikyo attempted ten chemical attacks and seven biological attacks between 1990 and 1995.<sup>214</sup> If a cartel takes similar steps that Aum

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<sup>212</sup> Kyle B. Olsen, "Aum Shinrikyo: Once and Future Threat?" Center for Disease Control and Prevention, <http://www.cdc.gov/ncidod/EID/vol5no4/olson.htm> (accessed on June 12, 2010).

<sup>213</sup> A. Oppenheimer, "Aum Shinrikyo: Lessons to be Learnt," under "Apocalyptic actions," Janes, [https://www.opensource.gov/providers/janes/search/Search/documentView.do?docId=/content1/janesdata/mags/jtsm/history/jtsm2004/jtsm0283.htm@current&pageSelected=allJanes&keyword=aumshinrikyo&backPath=http://search.janes.com/Search&Prod\\_Name=JTSM&](https://www.opensource.gov/providers/janes/search/Search/documentView.do?docId=/content1/janesdata/mags/jtsm/history/jtsm2004/jtsm0283.htm@current&pageSelected=allJanes&keyword=aumshinrikyo&backPath=http://search.janes.com/Search&Prod_Name=JTSM&) (accessed through www.opensource.gov on June 12, 2010).

Shinrikyo took or starts matching its organizational profile, then intelligence alarms should be sounded.

Aum Shinrikyo's ranks were filled with extremely intelligent and capable people. Aum Shinrikyo employed or recruited people with advanced degrees and positions in fields conducive to making bioweapons, including scientists and engineers.<sup>215</sup> Therefore, an important indicator of a cartel's attempt to produce a biological weapon is the presence of people with advanced biological or chemical degrees or who work in biology labs on the cartel payroll. Furthermore, Aum Shinrikyo unsuccessfully attempted to hire Russian chemical weapons developers in 1994.<sup>216</sup> Reports of any cartel attempting to hire an engineer from any state run biological weapon program should thus serve as an important warning. Cartels may attempt to hide these people or disguise the purpose of their employment. For instance, a cartel may display these scientists as more directly involved with drug production. The implementation of counter-deception analysis would be important in uncovering this type of ruse.

Besides scientists and engineers, a cartel could associate with other illicit organizations that could aid them in acquiring a biological weapon. To build its finances, Aum Shinrikyo designed drugs for the Yakuza, a Japanese mafia group.<sup>217</sup> Such an association was mutually beneficial for each group. A similar criminal/scientific association involving a cartel could be indicative of a cartel's introduction into a field (such as bioweapons) to which it did not have previous access. Once more, counter-

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<sup>214</sup> Stratfor, "Al Qaeda and the Threat."

<sup>215</sup> Ibid.

<sup>216</sup> Oppenheimer, "Aum Shinrikyo: Lessons to be Learnt," under "Apocalyptic actions."

<sup>217</sup> Olsen, "Aum Shinrikyo: Once and Future Threat?"

deception analysis would be needed to realize that this association would not be pertinent to the cartel's drug business. Such questions would need to be asked:

- Is a cartel consulting with terrorists or other criminal groups to learn about new weapons?
- Has a cartel consulted with any bioweapons experts or biologists?
- Has a cartel consulted with anyone who has worked on bioweapons program for another criminal or terrorist organization?

In addition to consorting with various groups and people to acquire a biological weapon, Aum Shinrikyo members also traveled to Zaire to acquire Ebola, a painful, deadly, and contagious hemorrhagic fever virus, from a village that was experiencing an outbreak. A cartel also has the capabilities to monitor similar outbreaks throughout the world for the purpose of harvesting a rare and deadly disease. By screening the news, scientific bulletins, and placing sources in key points, a cartel could stay informed on the latest outbreaks then shuttle members around the world to collect disease samples.

Additionally, a cartel could position sources to gain access to high security biology and biodefense labs. Reports of these activities could show that a cartel is seriously pursuing the acquisition of a biological weapon. Furthermore, the USIC should scrutinize the travelling habits of cartel scientists believed to be involved with drug production.

Unexplained travel destinations or travel patterns could become clear when perceived through the context of acquiring a biological agent. The USIC could then realize that a cartel's drug manufacturing scientist was actually a bioweapon scientist.

Aum Shinrikyo pursued multiple biological agents and attempted to develop multiple weapons.<sup>218</sup> Some of the agents that it cultured and experimented with include anthrax (or what it mistakenly believed to be anthrax), Q fever, cholera, and botulin toxin.<sup>219</sup> In its attempt to perfect a biological weapon, a cartel may also pursue and experiment with different bacteria and viruses. In addition to the previously mentioned acquisition indicators, there could also be culturing and testing indicators. The USIC should have channels open to receive reports of infected livestock and breakouts among human populations in a cartel's territory.

## **D&D INDICATORS**

Several examples have been provided in this chapter that demonstrate the need for counter-deception analysis to strip away the D&D that conceals the real intent of a cartel's actions. Counter-D&D analysis can make random anomalies align to form a coherent picture. It is plausible that a cartel will hide its attempts to acquire, develop, and use a biological weapon. Since it has not been discovered that a cartel has yet attempted to acquire a biological weapon, there is no cartel-specific baseline activity to review that indicates that a cartel is attempting to acquire or use a bioweapon. For the purpose of analysis, it could be useful to assume that a cartel has never acquired or attempted to acquire a biological weapon. Based on this assumption, the USIC can lump all cartel activity as activity unassociated with biological weapons. New activities and practices should be scrutinized and juxtaposed with a cartel's past activities and practices.

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<sup>218</sup> Cordesman, *Challenge of Biological Terrorism*, 15.

<sup>219</sup> Olsen, "Aum Shinrikyo: Once and Future Threat?"

Activities dissimilar to established practices could be further examined and compared to Aum Shinrikyo practices. Anomalies may then be explained and gaps in a cartel's cover story may be revealed. Attempts to conceal a biological agent acquisition or bioattack could be uncovered through this process.

Counter-D&D analysis could also evaluate the sources and channels through which the USIC has received bioweapon information in Mexico. This is especially true when determining attribution for a biological weapon attack. Since the Mexican government is so corrupt, it is important to evaluate the channels from which the United States gets vital information. Counter-D&D analysis could determine the likelihood that a channel, such as a Mexican liaison to a U.S. intelligence agency, is being controlled by a cartel. Further analysis may even show that a cartel is passing false information to keep the United States blind to an impending attack or concealing its involvement in an ongoing attack.

If a cartel is suspected of conducting more advanced and unprecedented deception practices, such as a See-Think-Do scenario, then it is important to discover how it learned such methods. The obvious source would be the Joint Publication 3-13.4, which outlines military deception and can be accessed through the internet. It would be important, however, to investigate connections between a cartel and Mexican military or intelligence personnel who have trained or been a liaison with the U.S. military or USIC. The investigation should determine whether such Mexican government personnel were trained in or learned about military deception and D&D doctrine. The investigation should determine whether these government personnel with D&D training are helping any cartels and imparting their D&D knowledge on the cartel.



## **CONCLUSION**

All of the Mexican cartels are extremely violent and may already be ruthless enough to conduct a biological attack. Each of them has the financial and logistical capabilities to build and deploy a biological weapon. Growing trends in violence and sophistication coupled with an increased threat to their business will only make the cartels more of a threat to use a biological weapon. Other situations in the drug war may arise that make a bioweapon the perfect weapon to use against the United States. Once signs appear that a cartel is a realistic threat to use a biological weapon, its activities should be compared to those of the Aum Shinrikyo cult. If a cartel takes steps that happen to emulate Aum Shinrikyo's patterns related to biological weapons, then that cartel would become a more credible threat to use a biological weapon. By monitoring these characteristics; ruthlessness, sophistication, and similarities to Aum Shinrikyo's activities; the United States is likely to avoid a cartel's surprise bioattack.

## **CHAPTER 6**

### **Crossing the Threshold**

#### **INTRODUCTION**

The 2001 anthrax attack showed many of America's potential enemies that such an attack is possible and that the United States is vulnerable. Many adversaries paid very close attention, the Mexican drug cartels possibly being one of them. Some noted that a simple attack could have devastating consequences. This thesis provides the mechanics of how a potential adversary could plan a biological attack on the United States based on the 2001 attack. Furthermore, this thesis sought to fill certain IC gaps pertaining to biological weapons. This thesis points out that a previous attack on the United States provides utility to U.S. enemies by revealing U.S. weaknesses and responses to a bioattack. These weaknesses, responses, and other effects of the anthrax attacks were cataloged in this thesis. A new perspective was brought to the anthrax attacks by viewing it as a guide that other national security threats can use to attack the United States. In addition to IC gaps concerning bioweapons, this thesis attempted to fill gaps concerning an emerging threat, the Mexican drug cartels. Previous threats have usually included only rogue states, psychotic individuals, and Islamic terrorist groups. The above-mentioned points will be further examined in the findings and results of this final chapter. Policy

recommendations and future thesis topics will then be derived from the findings and results.

## FINDINGS AND RESULTS

In the beginning, this thesis asked *how would a Mexican drug cartel use the 2001 anthrax attack as a proof of concept to conduct a biological attack within the United States to deter law enforcement counterdrug efforts and intimidate rival drug organizations*. This question had a subset of key questions:

- Why would drug cartels use the anthrax attacks as a proof of concept?
- What would the drug cartels learn from the anthrax attack?
- What motivations exist that determine the possibility and method of a cartel using a bioweapon?
- How would a drug cartel conduct a biological attack?

The first question, why would drug cartels use the anthrax attack as a proof of concept, was answered in Chapter Two. There is a bounty of information on the anthrax attack that could be used to tailor a biological attack to fit an organization's needs. After studying the effects, a non-state actor could attempt to duplicate or magnify one or several of the effects. When specifically considering a Mexican drug cartel, the anthrax attack had impacted the United States in many different ways that could be relevant to a cartel's motivations and goals. Chapter Two discussed the relationship between effects and goals by focusing on three specific effects (fatalities and casualties, economic damage, and fear) and analyzing how successfully the anthrax attack created each of

these effects. The chapter then suggested steps that could be taken to duplicate or maximize an effect if it was important to a cartel.

The second key question, what would the drug cartels learn from the anthrax attack, was answered in Chapters Two and Three. Again, by analyzing specific effects of the anthrax attack and relating it to possible goals and motivations of a cartel, this question was answered. These chapters concluded that a cartel could learn from the anthrax attack that a biological attack can be very destructive and customized to fit different situations and accomplish different objectives. Relative to the specific effects that were covered in Chapter Two; fatalities and casualties, economic damage, and fear; the chapter predicted that a cartel would use a different biological agent and delivery method if it wanted to kill and injure a massive amount of people. The chapter concluded that the economic damage caused by the 2001 attack was substantial and a cartel could follow the steps of the attack closely to duplicate the effect. It was determined that fear was a complicated effect. Overall, a cartel could see that little fear was created by the anthrax attack. It could be argued, however, that a large degree of fear was created by an attack that caused so few deaths, injuries, and physical damage. A cartel could conclude that a bioattack may not need to produce a large tangible impact in order to generate a level of fear that could change national policies.

Chapters Three and Four answered the third question, what motivations exist that determine the possibility and method of a cartel using a bioweapon. Implicit in the question is, “who are the drug cartels?” These two questions were answered by reviewing the specific Mexican cartels, cataloging the challenges that they face, determining what their purpose, goals, and objectives are, and analyzing their methods

for overcoming their challenges and accomplishing their goals. It was determined that the cartels use escalating levels of violence to accomplish their goals, which generally revolve around making money. Furthermore, the cartels are coming under an increasing amount of pressure from each other and the Mexican and U.S. governments. It is plausible that a cartel could assess its situation and conclude that a diverse and potentially violent tool like a biological weapon could solve many of its problems.

Chapter Four answered the final question, how would a drug cartel conduct a biological attack, by using a scenario. The scenario picked a potential goal (to increase its standing and improve the environment for the drug trade), a potential target (the United States), and a desired effect (fear). Based on these factors and the ease of bioweapon production, a cartel bioweapon designer picked three suitable biological agents: pneumonic plague, Q fever, and tularemia. The scenario demonstrated that a simple attack could affect many civilians, confuse the public and national policy makers, preserve the cartel's anonymity if desired, and affect national policy.

By answering these key questions, the main research question was answered. This thesis showed how a drug cartel could use the lessons learned from the 2001 anthrax attack to conduct a bioattack against the United States to accomplish its goals.

This thesis went on to hypothesize that ***a threat assessment analysis could illustrate that Mexican narco-terrorists are an emerging danger to use a biological weapon to further their own agendas. Such an analysis, informed by lessons learned from the 2001 anthrax attack, can reveal indicators and warnings of their capabilities and preparations to conduct a biological attack.*** This thesis builds an argument that Mexican drug cartels are an emerging and viable threat to launch a biological attack

against the United States. Furthermore, a cartel could use lessons learned from the 2001 anthrax attack to launch an attack that creates the desired effects and fulfills its goals.

Each chapter was a building block of this argument.

- Chapter Two illustrated that effects of the attack could be studied and that an attack built for a specific purpose could be derived from the anthrax attack.
- Chapter Three illustrated that the cartels are qualified to launch a bioattack on the United States and that motivations exist for a cartel to launch an attack. These qualifications include the financial and logistical capabilities and the ruthlessness needed to conduct an attack.
- Chapter Four built an attack scenario to demonstrate that a bioattack is possible. It provided one possibility out of many of how an attack could occur.
- From these chapters, indications and warnings were developed in the Chapter Five to predict when and how a cartel would conduct a biological attack.

Based on the answers to the research question and the hypothesis, this thesis found that the Mexican drug cartels are a present danger to launch a bioweapon strike against the United States. If the trajectories of violence and sophistication continue upward, then this threat will only grow. Additionally, if U.S. involvement in the drug war increases, then the United States will become a bigger target for two reasons. First, effective U.S. counterdrug policies may put more pressure on the cartels, forcing one of them to take drastic actions to offset successful government efforts. It is plausible that such a severe tactic as a bioattack could be used since the United States is such a formidable foe. Secondly, it has been demonstrated that effective law enforcement

practices might actually accelerate the evolution of these cartels.<sup>220</sup> What might now be a read-and-react group that causes strategic ripples through an aggregate of operational and tactical actions could become an efficient corporation with strategic-minded leaders who can alter national policy with one blow.

The findings of this thesis indicate that a bioattack by a Mexican cartel should be taken more seriously. Most of the policymakers and USIC are concerned with a biological strike by Islamic terrorists, especially Al Qaeda. However, compared to Al Qaeda, the Mexican cartels are wealthier and have better access to the United States with a closer and more robust base of operations. Additionally, the cartels and Al Qaeda are under a relatively equal amount of pressure. This means that the cartels and Al Qaeda should have an equal amount of motive and opportunity to attack. Yet, Al Qaeda is considered a much more dangerous threat to U.S. national security. Such a focus on established threats leaves the United States vulnerable to the next threat that is just over the horizon.

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<sup>220</sup> Fainaru and Booth, "Mexican Cartel's Swift and Grisly Climb," under paragraph five.

## POLICY RECOMMENDATIONS

Several policy recommendations can be derived from the findings of this thesis. These recommendations span the topic spectrum of this thesis, from the drug cartels, to a potential bioattack. The following recommendations are designed to bolster U.S. national security against a bioattack and to prevent a surprise attack from a drug cartel.

- The Commission on the Prevention of WMD Proliferation and Terrorism believes that, since biotechnology knowledge and equipment is becoming more prevalent, a biological attack will occur by 2013.<sup>221</sup> The combination of lower barriers to biotechnology and increased sophistication of drug cartels makes a bioattack by a cartel plausible. This, combined with the escalation of the Mexican conflict and a potential increase in U.S. involvement, could cause a cartel bioattack on the United States in an even shorter period of time. A bioattack threat assessment based on capabilities and resources should be conducted at an agency level. Two likely agencies would include the Department of Homeland Security and FBI. In addition, the Commission on the Prevention of WMD Proliferation and Terrorism has recommended that, in order to reduce the proliferation of dangerous biotechnology,
  1. a review of the program to secure dangerous pathogens should be conducted;<sup>222</sup>
  2. a national strategy to advance bioforensic capabilities should be adopted;<sup>223</sup>

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<sup>221</sup> *World at Risk*, xvi.

<sup>222</sup> *Ibid.*, 27-28.



3. oversight of the high containment (BSL-3 and BSL-4) labs should be intensified.<sup>224</sup>

Additionally, based on its research of the present condition of high containment labs, the GAO has recommended that the National Security Advisor meet with the Secretaries of Health and Human Services, Defense, Agriculture, Homeland Security, the National Intelligence Council, and other appropriate agency heads to select a single agency responsible for the oversight, planning, and evaluation of biodefense lab operations and expansion.<sup>225</sup> The GAO also concurs with the Commission on the Prevention of WMD Proliferation and Terrorism on the need to review and improve controls for pathogenic inventories.<sup>226</sup> These actions could help prevent future abuses by insiders and limit the possibilities of non-state actors recruiting biodefense scientists for their expertise or access to biological agents.

- A strike could come from anywhere. Preventing every potential attack from every enemy is impossible. Building defenses against single biological agents, such as anthrax, an agent previously used against the United States, to prevent from being attacked by it again, is costly and ineffective against the next biological agent to be used. The reactive effort with anthrax is a narrow solution

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<sup>223</sup> *World at Risk*, 27-28.

<sup>224</sup> *Ibid.*

<sup>225</sup> U.S. Congress, Senate, Committee on the Judiciary, Subcommittee on Terrorism and Homeland Security, *High-Containment Laboratories: National Strategy for Oversight is Needed*, 111 Cong., 1<sup>st</sup> sess., September 22, 2009, 5, <http://www.gao.gov/new.items/d091045t.pdf> (accessed on June 14, 2009).

<sup>226</sup> *Ibid.*, 6.

that used too many resources. Dedicating resources to prevent attacks from specific agents could bankrupt the United States, while still remaining vulnerable to a biological attack. A more generalized effort to mitigate the effects of an infection by improving public health response capabilities should become the focus. Such an approach would be cheaper and more effective against a wider variety of biological agents. This approach would consist of increasing the mass-casualty capacity of hospitals and first responders, increasing vaccine production and distribution, and improving workforce preparedness.<sup>227</sup> The Commission on the Prevention of WMD Proliferation and Terrorism also endorsed a similar approach that would increase the U.S. capability to respond rapidly to a bioattack to mitigate the effects of infection.<sup>228</sup>

- Understand that American actions impact the course of the drug war. In a general sense, the United States and Mexico are linked through cause and effect. More specifically, American drug consumption and lax U.S. firearm laws have fueled the Mexican drug war and augmented the cartels' wealth and power. Although the exact number is unknown, the Mexican drug cartels get thousands of their firearms from the United States.<sup>229</sup> In 2007 alone, approximately 1,112 guns that were submitted for tracing from Mexico to the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) originated in Texas, Arizona and California.<sup>230</sup>

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<sup>227</sup> Johnstone, *Bioterror*, 165.

<sup>228</sup> *World at Risk*, 27-28.

<sup>229</sup> Factcheck.org, "Counting Mexico's Guns," The Annenberg Public Policy Center of the University of Pennsylvania, <http://www.factcheck.org/2009/04/counting-mexicos-guns/> (accessed on June 13, 2010).

Weapons that are submitted for tracing represent only a small fraction of weapons that are recovered, which represents only a small fraction of weapons used.

Additionally, Americans get 90% of their cocaine shipped to them via the drug cartels' routes.<sup>231</sup> The United States government must realize that Americans have played a role in this conflict. If politicians do not independently acknowledge this fact and enact defensive policies to prevent the war from bursting across the border and proactive policies that attack the root causes of the conflict, then something as devastating as a mass casualty biological attack may force the United States to realize its place in the drug war.

- A concerted effort must be made to quickly end this war and eliminate the cartels before it devolves further and is fought within U.S. borders. Fighting the war as is presently done allows the cartels to use sanctuaries within Mexico and keeps the cartels outside the effective reach of the full gamut of U.S. law enforcement and intelligence capabilities. These cartels can not be allowed to grow in sophistication and viciousness. Such an allowance would make it harder to eliminate them and raise the cost in lives and resources required to do so. A more dire commitment to lose lives may be needed to resolve this problem if the cartels develop striking capabilities with a biological weapon. Additionally, the United States may not be able to react once it has already been attacked with a bioweapon. A comprehensive offensive involving members from U.S. law

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<sup>230</sup> U.S. Congress, House of Representatives, Committee on Foreign Affairs, Subcommittee on the Western Hemisphere, *Statement of William Hoover, Assistant Director for Field Operations Bureau of Alcohol, Tobacco, Firearms and Explosives Before the United States House of Representatives Committee on Foreign Affairs Subcommittee on the Western Hemisphere*, 110 Cong., 2<sup>nd</sup> sess., February 7, 2008, <http://www.atf.gov/press/releases/2008/02/020708-testimony-atf-ad-hoover-sw-border.html> (accessed on June 13, 2010).

<sup>231</sup> Fainaru and Booth, "As Mexico Battles Cartels."

enforcement, intelligence, and even the military operating within Mexico may be the only way to prevent the cartels from developing such capabilities. In addition to the current efforts to infiltrate and disrupt the cartel organizations and activities, these U.S. government elements would directly confront cartel forces. Such an offensive should focus on tearing down any cartel strongholds within Mexico, eliminating the cartels' ability to manipulate Mexican society for their benefit, demolishing the societal structures that support the cartels, and ultimately destroying the cartels.

- While legislation should be passed that attempts to stop the drug war, policy makers should beware of increased military, intelligence, and law enforcement involvement in the drug war. Greater involvement of course risks the lives of those directly engaged but may also cause a cartel leader to seek retribution by attacking the U.S. civilian base. Increased U.S. dedication to the conflict should be accompanied by increased border security and monitoring of cartel activity within Mexico and the United States. Monitoring cartel activity includes penetrating these organizations and placing sources at every level. The United States and Mexico should also develop joint operations that observe and sensitize incarcerated cartel members, especially former bosses, in U.S. and Mexican prisons. Attention should be paid to the cartels' motivations and habits. A break from established habits may indicate that a cartel has metamorphosized into a different type of organization or that its capabilities have reached a new level. Such transformations might be accompanied by a shift in goals and outlook that could be more dangerous to the United States.

- Work to reduce corruption in Mexico. Government corruption gives a cartel control over official liaison and reporting channels to the United States. These corrupted channels allow a cartel to send inaccurate information that confuses and misguides U.S. policy.

## **FUTURE RESEARCH TOPICS**

This thesis answers a very narrowly defined research question, with a specific threat that implements a precise attack plan that uses certain biological agents. Two subjects, biological weapons and Mexican drug cartels, converged in this thesis. There are many other topics related to this thesis that would add value to the subject matter. The following future research topics are suggested:

- Smuggling WMD through Latino gang networks
- The cyber-attack threat posed by Mexican drug cartels
- The threat posed to the United States by a Mexican drug cartel/Islamic terrorist organization (specifically Hezbollah) alliance
- A biological or chemical attack based on the acquisition, development, and attack patterns of the Japanese cult, Aum Shinrikyo
- The Strategic D&D potential of Mexican drug cartels based on their operational and tactical D&D capabilities
- A vulnerability assessment of the United States relative to specific biological weapons, including a bioattack using multiple biological agents

- The plausibility of a rogue state or non-state actor using a genetically modified biological weapon to attack the United States

## FINAL SUMMATION

In summary, this thesis acknowledges that the amount of ruthlessness and sophistication required to conduct a biological attack is a matter of opinion. Several points, however, should be noted. As the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism discussed in *World at Risk*, advances in biotechnology and the proliferation of dual use technology is constantly making the potential development of a biological weapon less difficult. As a result, a biological weapon is becoming an option for more of America's enemies. As the barriers to developing a biological weapon are becoming lower, the level of the Mexican cartels' sophistication and ruthlessness is trending higher. At some point these trajectories will intersect, if they have not already. All that will be left is a reason to use a bioweapon. Which introduces a third trajectory into this picture: U.S. involvement in the drug war. As the United States becomes more involved in the drug war, the likelihood of a cartel attacking the United States grows. Decreased difficulty in bioweapon development, combined with increased sophistication and viciousness of the cartels, combined with increased U.S. involvement in the Mexican drug war suggests that a cartel will eventually cross that threshold of attacking the United States with a biological weapon.

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## **ABSTRACT**

**TITLE OF THESIS:** Drugs and Bugs: Narco-terrorists, Bioattacks, and the Lessons of Anthrax

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The Mexican drug cartels are a threat to the U.S. national security due to their financial resources, violent nature, proximity to the United States, and networking and infiltration capabilities. They could become an even larger threat if they applied lessons learned from the 2001 anthrax attack to a future bioattack on the United States. Such lessons could show a cartel how to design an attack simply and cheaply that would exploit the vast gaps of America's meager biodefenses. Given this threat, this thesis asks: *how would a Mexican drug cartel use the 2001 anthrax attacks as a proof of concept to conduct a biological attack within the United States to deter law enforcement counterdrug efforts and intimidate rival drug organizations?*

This thesis attempts to answer this question by applying the threat assessment paradigm as defined by the Government Accountability Office. Within that paradigm, this thesis uses a case study to analyze the 2001 anthrax attack and a scenario to conceive of a plausible way in which a Mexican cartel would launch a bioattack on the United States.



By utilizing these research methods, this thesis found that the cartels are vicious and sophisticated enough to use a biological weapon against a civilian population. A cartel could be motivated to launch a bioattack in order to offset U.S. and Mexican government counter-drug efforts and accumulate power. Additionally, this thesis found that a simple and relatively cheap bioattack could cause enough fear in a population to force policymakers to re-assess their counter-drug policies.

Bioweapon capabilities are continually becoming easier to acquire and cartels are becoming more sophisticated and ruthless. These trajectories will intersect at some point, if they have not already. The United States would benefit from military, law enforcement, and intelligence elements infiltrating, disrupting, and directly confronting the cartels before they gain a near unassailable position granted to them by possessing rapid bioweapon development capabilities.

**DRUGS AND BUGS:  
NARCO-TERRORISTS, BIOATTACKS, AND THE LESSONS OF ANTHRAX**

by

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MSSI Class 2010

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The views expressed in this paper are those of the author and do not reflect the official  
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## **CHAPTER ONE**

### **Threat on the Southern Horizon**

## **INTRODUCTION**

### **The Cartels**

The land routes through Mexico have become the most dependable ways to get drugs into the United States. Approximately 90% of all cocaine that enters the United States comes through Mexico.<sup>1</sup> As a result, these routes are very valuable. Control of these routes belongs to several complex indigenous criminal organizations, commonly referred to as drug cartels. Currently, these cartels include the Beltran Leyva Organization, Gulf Cartel, Juarez Cartel, La Familia, Los Zetas, Sinaloa Cartel, and Tijuana Cartel. The money gained from owning these routes makes the Mexican drug cartels some of the most capable non-state actors in the world. It is estimated that these cartels earn between \$18 and \$39 billion from wholesale drug sales within the United States annually.<sup>2</sup> Their annual operating budgets reach billions of dollars and their trafficking networks are global.

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<sup>1</sup> Steve Fainaru and William Booth, "As Mexico Battles Cartels, The Army Becomes the Law," *The Washington Post*, April 2, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/04/01/AR2009040104335.html?nav=emailpage> (accessed June 2, 2010).

<sup>2</sup> Senate Committee on Foreign Relations, *Southern Border Violence: Homeland Security Threats, Vulnerabilities, and Responsibilities*, 111 Cong., 1<sup>st</sup> sess., 2009, 6, <http://www.justice.gov/dea/pubs/cngrtest/ct032709.pdf> (assessed June 2, 2010).



These criminal organizations have reached a level of violence rarely seen throughout history. In a battle for control over these lucrative drug trade routes into the United States, rival cartel members continually engage each other in street battles that produce literal heaps of dead bodies. Any prisoners that are taken are often tortured, mutilated, and beheaded. Where they were once collateral casualties, civilians are now becoming intentional targets of cartels that want to maintain a tight grip over their territories.

Additionally, in an apparent attempt to quell the bloodshed, the Mexican military has been mobilized to confront the cartels. Alas, this step has only escalated the carnage and plunged Mexican society further into chaos. Drug-related murders in Mexico doubled each year from 2006 to 2008, with law enforcement and military personnel accounting for almost ten percent of the 2008 murders.<sup>3</sup>

Increased chaos could be catastrophic since Mexican society and government is already tainted by a degree of corruption that stifles basic government functions and undercuts the fundamental rule of law. To exacerbate matters, the cartels are on course to become even more violent and powerful, which would allow them to exert greater control inside the weakened state. The upward trajectory of the cartels' power combined with the downward course of the legitimate portions of the Mexican state could allow these narco-terrorists to challenge the authority of the Mexican government.<sup>4</sup>

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<sup>3</sup> Senate Committee on Foreign Relations, *Southern Border Violence: Homeland Security Threats, Vulnerabilities, and Responsibilities*, 111 Cong., 1<sup>st</sup> sess., March 30, 2009, 5, <http://www.justice.gov/dea/pubs/cngrtest/ct032709.pdf> (assessed June 2, 2010).

<sup>4</sup> House Foreign Affairs Committee, *The U.S. Government's Domestic Obligations Under the Merida Initiative*, 110 Cong., 2<sup>nd</sup> sess., February 7, 2008, under "Overview," <http://www.justice.gov/dea/speeches/s020708.html> (assessed June 2, 2010).

Furthermore, one of the most wide-reaching and violent collections of criminal groups operating in one of the most unstable countries of the world is inextricably linked to the United States. These organizations' bases of operations are in a neighbor of the United States, they have robust transportation and distribution infrastructures within the United States, and these organizations' survival depends upon Americans purchasing their product.

To summarize:

- The Mexican drug cartels are currently some of the most powerful, capable, and dangerous non-state actors in the world.
- Their base of operations is in Mexico, a nation adjoining the United States.
- The Mexican government is at risk of losing the remainder of its control over the state. The Mexican drug cartels could usurp the government's authority and exploit the distribution of common government services for their own benefit.
- Their livelihood depends upon American drug spending and they will presumably defend access and fight interference to that revenue source vigorously.

These factors combine to form an immediate and formidable threat to U.S. national security. If one of them was motivated to do so, a cartel could pick one of a myriad of ways to kill scores of Americans and disrupt U.S. society. These cartels do not lack motive to attack the United States. Through the Merida Initiative, the United States has appropriated \$1.15 billion since 2008 to fund the Mexican government's law enforcement

and military measures against the cartels.<sup>5</sup> Being an integral financial, logistical, and political supporter of Mexican President Felipe Calderon's military conflict against the cartels makes the United States the possible target of a cartel. This is especially true if U.S. support produces successful counterdrug efforts that substantially pressure the cartels. To relieve the pressure, a cartel may look to cut off U.S. assistance.

### **The Bioweapon Solution**

To reduce U.S. involvement, a cartel could choose to attack the United States with a weapon of mass destruction (WMD). The Literature Review, however, will point out that most of the national security concerns about Mexican drug cartels regarding WMD are focused on a possible Islamic terrorist group exploiting the cartels' drug infiltration capabilities to smuggle its own WMD into the United States. Rarely has it been considered that a Mexican drug cartel may smuggle its own WMD into the United States for the purpose of advancing its own goals. This possibility has been ignored in spite of the fact that these cartels are motivated, ruthless, and capable enough to carry out such an operation. Discounting such a possibility could lead to a strategic surprise proportional to 9/11.

Unfortunately for the United States, the 2001 anthrax attack provided the cartels with a possible method of attack. The 2001 attack revealed facts about the nature of a bioattack and insight into the manner and degree to which the United States was affected. Before, a bioattack may not have been considered a serious option. Now, however, the cartels have had the opportunity to study the responses and reactions of the different

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<sup>5</sup> U.S. Department of State, "The Merida Initiative," under "Initiative's Scope," <http://www.state.gov/p/inl/rls/fs/122397.htm> (accessed June 2, 2010).

facets of U.S. society, to include the media, politicians, and the civilian population. As a result, a cartel has a better idea of what is plausible, feasible, suitable, and viable.

Mexican narco-terrorists have possibly realized that a simple operation that caused little physical devastation could trigger massive reverberations through the U.S. economy and morale. For instance, the 2001 bioattack only killed five people and infected 22, but the U.S. government has spent \$50 billion in connection to the anthrax attacks and preventing the next biological attack.<sup>6</sup> Narco-terrorists may also realize that, in spite of the money spent on biodefenses, the United States is still quite vulnerable to a biological attack. By deconstructing the attack and analyzing its effects, a cartel could assess its goals, judge how successfully a 2001-style attack would meet those goals, and conceive a bioattack that would accomplish its goals more effectively.

Such a bioattack may not need to be completely successful to fulfill a cartel's objectives. Even if a cartel aimed to kill hundreds or thousands of Americans, but only tens died, the attack could still have similar repercussions because of the weapon used. A biological weapon demonstrates sophistication on the part of the user. An organization that conducted a bioattack with some degree of success will be viewed as a serious threat and a formidable enemy whose demands and motivations will garner attention.

In addition to a level of sophistication associated with a group who conducts a bioattack, there is a degree of fear that is inherent in a biological weapon. If the U.S. population was simply told by a national enemy that it was under attack by a biological weapon, then it is plausible that a moderate amount of fear would be generated. The

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<sup>6</sup> U.S. Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, *World at Risk: The Report of the Commission on the Prevention of WMD Proliferation and Terrorism* (New York: Vintage Books, 2008), 25, [http://www.preventwmd.gov/static/docs/report/worldatrisk\\_full.pdf](http://www.preventwmd.gov/static/docs/report/worldatrisk_full.pdf) (accessed June 2, 2010).

actual presence of a biological agent from a bioattack would cause even more fear depending on the dispersal methods and agent used. Infections and deaths from a biological attack could cause mass panic, initiate large scale government spending, and cause U.S. policymakers to reassess their decisions and the decisions of their predecessors.

Another problem exists if a cartel desired to launch a bioattack on the United States. The combination of the stealthy potential of a bioweapon and pervasive corruption inside Mexico could enable a drug cartel to launch an attack and melt into the shadows. A biological weapon is well-suited for an attacker who wants to preserve its anonymity or deceive its target. If an attacker desired, it could design an attack to make the infections appear to result from a natural breakout. The cartel could also take credit for the attack once the time was right and it had made preparations to defend against retaliation and exploit reactionary missteps. Meanwhile, Mexico is the perfect environment to stage a deception operation around the bioattack build-up. Such an operation could hide the cartel's connections to the attack and mislead the target about who was behind the attack. Investigations can come to dead ends due to war-torn conditions of the state and the placement of cartel sources in important government positions to derail searches for the perpetrator of a bioattack. Using a bioweapon and seeking the shelter of Mexico could serve to multiply the cartel's capabilities and power.

The Mexican drug cartels are a threat to the United States because of their immense capabilities and resources, violent nature, proximity to the United States, established channels that penetrate deep within the United States, and control over vast geographic and social swaths of Mexico. What makes them an even greater danger to the

United States is that the cartels have been provided with the outline of an attack plan in the form of the 2001 anthrax attack. Such an attack could show a cartel how to design an attack simply and cheaply that would exploit the vast gaps of America's meager biodefenses that would manipulate U.S. reactions to the cartel's benefit.

## **RESEARCH QUESTION, KEY QUESTIONS, AND ASSUMPTIONS**

### **Key Questions**

To determine the threat capacity of the Mexican drug cartels and the steps that one would take to attack the United States with a biological weapon, several key questions must be answered. This thesis will answer the following questions:

- Why would drug cartels use the anthrax attacks as a proof of concept?
- What would the drug cartels learn from the anthrax attack?
- What motivations exist that determine the possibility and method of a cartel using a bioweapon?
- How would a drug cartel conduct a biological attack?

### **Research Question**

By answering these key questions, the overarching research question of this thesis will be answered. The research question asks:

*How would a Mexican drug cartel use the 2001 anthrax attacks as a proof of concept to conduct a biological attack within the United States to deter law enforcement counterdrug efforts and intimidate rival drug organizations?*

## **Assumptions**

A set of assumptions help guide the direction of this thesis and define its boundaries. This thesis assumes that:

- Cartels intend to stay in business.
- The Mexican drug cartels want to stop being attacked by the Mexican military.
- The Mexican drug cartels desire an end of U.S. counter-drug support to the Mexican government.
- Mexican narco-terrorists would want to change U.S. policy that specifically affects them rather than cause sweeping changes in the American way of life.
- A non-professional bioweapon designer could be found that would have the intellect and mechanical experience to conceive of and build a functional biological agent dispersal device.
- The level of bioforensic technology is not presently sufficient to trace the source of a biological attack that uses multiple agents.
- Additional assumptions relative to the attack scenario will be outlined in Chapter Four.

## JUSTIFICATION FOR RESEARCH

In 2008, the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism produced a report titled *World at Risk*. In it, the Commission makes several conclusions:

- a terrorist attack using a WMD will occur somewhere in the world by 2013;<sup>7</sup>
- of all WMD, nuclear and biological weapons have the potential to kill the largest number of people;<sup>8</sup>
- due to dual use technology and the difficulty of controlling biological material, it is more likely that a biological weapon will be used in this attack than a nuclear weapon;<sup>9</sup>
- the continued worldwide proliferation of biotechnology, though beneficial to humankind in the long run, is also dangerous because it lowers the intellectual and technical barriers surrounding the development of a biological weapon;<sup>10</sup>
- the U.S. government has not done enough to prevent the use of a biological weapon.<sup>11</sup>

These conclusions serve to justify the importance of this thesis. One of the purposes of this thesis is to show how all of the shortcomings pointed out in *The World at Risk* could be exploited to conduct a biological attack on the United States.

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<sup>7</sup> *World at Risk*, xv.

<sup>8</sup> *Ibid.*, xvi.

<sup>9</sup> *Ibid.*, xv.

<sup>10</sup> *Ibid.*, xvi.

<sup>11</sup> *Ibid.*, xvii.



Another purpose of this thesis is to identify the Mexican drug cartels as an emerging threat to the United States and plausible users of a biological weapon. In *The World at Risk*, the Commission to Prevent Weapons of Mass Destruction Proliferation and Terrorism predicts that a WMD attack, most likely with a biological weapon, will occur by 2013 since the biotechnological techniques to produce a biological weapon are becoming more widespread and counterproliferation measures are inadequate. Another part of this equation involves the increasing sophistication and diversity of potential U.S. enemies. Breakthroughs in the capabilities of enemy non-state actors could make an attack by 2013 a conservative estimate. As noted previously, the Mexican drug cartels have extraordinary financial resources and global networking and trafficking capabilities. There are also signs that these cartels are becoming more sophisticated and violent. This thesis argues that, because of their already substantial and possibly growing capabilities and the growing ease of producing a bioweapon, the Mexican narco-terrorists are a threat to launch a bioattack against the United States.

This thesis fills several other Intelligence Community gaps by cataloging the effects and impact of the 2001 anthrax attack, analyzing the value of these effects given by a group that desires to conduct a bioattack against the United States, and uses this analysis to postulate how a group, specifically Mexican narco-terrorists, could attack the United States in the form of an attack scenario. From this analysis and scenario, indications and warnings will be designed to predict when Mexican narco-terrorists might be developing a biological weapon and building up for an attack on the United States.

In summary, this thesis is unique because it focuses on an emerging threat that transforming from a criminal organization into a national security threat to the United

States. Additionally, it discusses the possibility of a Mexican cartel attacking the United States with a biological weapon. This possibility has rarely been considered. Furthermore, this thesis uses a new perspective of the 2001 attack by viewing it as a proof of concept to be used by potential bioattackers.

## **HYPOTHESIS**

*A threat assessment analysis could illustrate that Mexican narco-terrorists are an emerging danger to use a biological weapon to further their own agendas. Such an analysis, informed by lessons learned from the 2001 anthrax attack, can reveal indicators and warnings of their capabilities and preparations to conduct a biological attack.*

## **SCOPE**

As a threat assessment analysis, this thesis will only discuss characteristics of Mexican drug cartels that determine the degree to which they are a threat as defined in an analytic paradigm designed by the Government Accountability Office (GAO). The GAO ascertains the level of a threat by an entity's intent, capabilities, lethality, and precedence of actions. Concerning the 2001 anthrax attack, only aspects that show how the attack can be used as a proof of concept will be covered. This thesis will not speculate on the objectives or motivations behind the anthrax attack. Furthermore, only specific effects from those deemed useful to a future attack will be considered. Although, a drug cartel

could select a variety of weapons with which to attack the United States, the scenario in this thesis will only focus on a biological weapon. Relative to bioweapons, this thesis will exclude the possible use of genetically modified biological agents.

## LITERATURE REVIEW

A literature review indicates that there is a large body of work covering biological weapons and a large body of work covering the Mexican drug cartels; but the body of work combining the two subjects is extremely limited. The resources that do exist on the combined subjects, generally discuss the possibility of drug cartels smuggling terrorists and their WMD into the United States. For example, Andre Hollis states in *Transnational Threats* that terrorist organizations could use drug trafficking networks to smuggle WMD into the United States.<sup>12</sup> A 2005 *New York Times* article reported that former Director of Central Intelligence Porter Goss and former Department of Homeland Security Deputy Secretary Admiral James Loy voiced similar concerns when they testified before Congress.<sup>13</sup> As a result of the limited literature that directly focuses on the subject matter of this thesis, a review of the literature pertaining to the different parts of this thesis was conducted.

The 2001 anthrax attack is the first topic of this thesis. Two accounts of the anthrax attack include Leonard A. Cole's *The Anthrax Letters* and Marilyn W.

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<sup>12</sup> Andre D. Hollis, *Transnational Threats*, ed. Kimberly L. Thachuck (Westport, CT: Praeger Security International, 2007), 26.

<sup>13</sup> Douglas Jehl, "U.S. Aides Cite Worry on Qaeda Infiltration From Mexico," *New York Times*, February 17, 2005. <http://www.nytimes.com/2005/02/17/international/americas/17intel.html> (accessed June 2, 2010).

Thompson's *The Killer Strain*. *The Anthrax Letters* gives a detailed account of the attack from the scientists' and victims' perspectives. Cole describes the events surrounding the infected during. Cole also traces the actions of the epidemiologists and other public health scientists who were trying to solve the investigation and prevent more infections. While Thompson also deconstructs the events and actions of the ground-level actors, *The Killer Strain* also included the high-level government response to the attack. Thompson recounts the perspectives and actions of policy-makers during the attack and shows how these actions led to official policy.

The second area of source research would expand from the anthrax attack and cover the larger theme of biological attacks and bioterrorism which is encompassed in this thesis. The Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism produced a report, *World at Risk*, which details the current state of WMD-related terrorism, measures the possibility of a terrorist attack using WMD, assesses the preparedness of the United States to a WMD attack, and makes recommendations on how the U.S. government could better prevent a WMD attack. This report is focused primarily on nuclear and biological weapons. The Commission believes that the potential for a nuclear or biological attack is growing in spite of the anti- and counterproliferation measures taken by the United States. The Commission goes on to state that it believes that somewhere in the world will be attacked with a WMD by 2013. The Commission's report serves as the justifying foundation for this thesis. Furthermore, this thesis aims to serve as an extended warning of the dangers described in *World at Risk*.

The second book focusing on bioterrorism, *Toxic Terror*, written by arms control expert Jonathan B. Tucker, attempts to understand the motivations of terrorists who might want to acquire and use a biological weapon. This book also discusses the hurdles that terrorists must overcome to acquire or make a biological weapon. The contributors also discuss which biological agents would most likely be acquired and how they would be used on the public. This is accomplished through historical case research of groups who have attempted to acquire or use chemical and biological weapons.

In addition to *Toxic Terror*, *Microorganisms and Bioterrorism*, edited by Burt Anderson, Herman Friedman, and Mauro Bendinelli, will also be a useful source in providing medical and biological information that will help the reader to deduce which pathogen would be an ideal bioterrorism agent. *Microorganisms and Bioterrorism* discusses the medical aspects of several pathogens, including the plague, anthrax, tularemia, smallpox, brucella, and Q fever. The book gives technical descriptions of modes of infection and transmission. *Microorganisms and Bioterrorism*, however, gives no insight into terrorism methods.

The next book covering the topic of biological attacks, *The Challenge of Biological Terrorism* by Anthony H. Cordesman, is a wide-ranging book that looks at problems that terrorists face who want to use a biological weapon and problems that governments face who want to stop these terrorists. Cordesman uses several case studies and provides multiple points of view to discuss the complexities of bioterrorism. Like *World at Risk*, Cordesman points out that the technical challenges involved with developing a biological weapon are becoming easier. Cordesman also explains how a primary characteristic of bioweapons, the ability to attack without warning, is a great

benefit to terrorists and a huge disadvantage in a government's ability to alert the public that can not be compensated for.

The third major topic of this thesis involves the Mexican drug cartels. Due to the constant changing inherent in the Mexican drug trafficking environment, new books on the subject quickly become dated. As a result, newspaper articles are the most effective at staying abreast of the fluid nature of the drug war and cartel activities. Key internet sources include webpages that are dedicated the Mexican conflict and contains compilations of news articles and expositions. Three such sources are the *Los Angeles Times*' "Mexico Under Siege" webpage, *National Public Radio*'s "Mexican Cartels: Drug Organizations Extending Reach Farther into U.S." website, and *The Washington Post*'s "Mexico at War" website. These webpages cover multiple aspects of the drug war, including the Mexican government perspective, civilian perspective, cartel histories, and updated events. In addition to articles that are found in the respective print media, these webpages also contain multimedia reports that concentrate on a small facet that is representative of the entire conflict.

There are several gaps found in the body of literature that this thesis will address. Little literature has been found that considers the value of the 2001 anthrax attacks as a template for future bioattacks. By researching literature that discusses the details of the anthrax attacks, the viability of a bioterror attack of any kind, and the motivations of the drug cartels, this thesis will attempt to combine all of these subjects to provide an answer not only on the viability of conducting a bioattack based on the lessons learned from the anthrax attacks, but also on ways that narco-terrorists could increase the lethality and destructiveness of such an attack and the effects that it would have on the United States.

## **RESEARCH METHODOLOGY**

### **Data Collection Strategy**

Research for this thesis will be drawn from open sources. Information for this thesis will be gathered from hard copy sources, online sources, and interviews of subject matter experts in the U.S. Intelligence Community and other government agencies. The above literature review provides an example of the types of sources that will be researched for this thesis. In addition to books, journals and articles will also be researched. Additionally, the internet and online databases will also be utilized. Databases accessed through the DIA and FBI intranets will be used to find articles, assessments, and reports pertaining to this thesis topic. Interviews of the FBI's Amerithrax squad members will also be conducted to gain insight into the anthrax attacks and the investigation.

### **Analytical Strategy**

The purpose of this thesis is to assess the threat presented by a Mexican drug cartel to conduct a biological attack on the United States based on lessons learned from the 2001 anthrax attack. This threat assessment will be composed of a case study of the 2001 attack and a scenario of a possible path a cartel would take to plan and launch its own bioattack on the United States. These methodologies, as well as other qualitative analysis of the drug cartels, will help determine whether the drug cartels are a threat based upon the requirements laid out by the Government Accountability Office (GAO).

These requirements include lethality, precedent, capability, and intent which are defined in this thesis as ruthlessness, capability/sophistication, and motivation.

This thesis asks an exploratory question with the goal of formulating indications and warnings predicting the use of a biological weapon by Mexican narco-terrorists against the United States. This thesis asks, “How would narco-terrorists attack the United States with a biological weapon?” In order to answer that, the following questions must also be asked: “*What* happened during the 2001 Anthrax Attacks?” and “*How* was the anthrax attack conducted?” According to Robert Yin in *Case Study Research*, a case study is best suited to answer questions that ask “what” and “how”.<sup>14</sup> Yin defines a case study as “an empirical inquiry that

- investigates a contemporary phenomenon within its real-life context, especially when
- the boundaries between phenomenon and context are not clearly evident.”<sup>15</sup>

The findings of this case study will serve as a foundation for the remainder of the thesis. Answers to the questions implicit in the case study, “*What* happened during the 2001 Anthrax Attacks?” and “*How* was the anthrax attack conducted?” will show a relationship between the results of the anthrax attack and the needs and goals of a drug cartel. Furthermore, these answers will demonstrate how the lessons learned from the anthrax attack could be of use to narco-terrorists. To satisfy the requirements of a threat assessment, the case study will also explore the precedent that was established by the anthrax attack and its lethality.

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<sup>14</sup> Robert K. Yin, *Case Study Research*, 2<sup>nd</sup> ed. (Thousand Oaks, CA: SAGE Publications, 1994), 21.

<sup>15</sup> Ibid., 13.



The results of the case study combined with qualitative analysis of the Mexican drug cartels will be used to form a scenario on how a cartel might conduct a bioattack on the United States. Scenario analysis is ideal for contending with “what if” questions that have multiple possible outcomes.<sup>16</sup> Additionally, most scenarios deal with questions that usually have inherently unknowable answers.<sup>17</sup> The focal question of a scenario can not be answered with a “yes” or “no”.<sup>18</sup> Furthermore, scenarios generally deal with people or organizations relative to their environments.<sup>19</sup> Richard B. Heydinger and Rene D. Zentner describe scenarios more as “a technique of judgment and art than of science.”<sup>20</sup> Specific elements of a cartel’s capabilities and motivations will be selected from all of the variables to build the scenario.<sup>21</sup> Assumptions about these elements will then be outlined.<sup>22</sup> Unlike other scenario analyses that consider multiple outcomes, this thesis will only contain a scenario of one possible upshot, but acknowledges that other end results are possible.

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<sup>16</sup> Richard B. Heydinger and Rene D. Zentner, *Applying Methods and Techniques of Futures Research*, eds. James L. Morrison, William L. Renfro, and Wayne I. Boucher (San Francisco: Jossey-Bass, 1983), 52.

<sup>17</sup> Institute for Analysis, *Mapping the Future*, (Institute for Analysis, 2008), 86.

<sup>18</sup> *Ibid.*, 14.

<sup>19</sup> *Ibid.*

<sup>20</sup> Heydinger and Zentner, *Applying Methods and Techniques*, 54.

<sup>21</sup> *Ibid.*, 58.

<sup>22</sup> *Ibid.*, 59

## OVERVIEW OF REMAINING CHAPTERS

Chapter Two will focus on the 2001 anthrax attack. The chapter will provide a description of anthrax, including symptoms, infection pathways, life cycle, and infection and lethality statistics. The chapter will continue by reviewing the sequence of events of the anthrax attack. Chapter Two will culminate by discussing the effects of the 2001 bioattack and how they would be important to narco-terrorists who desire to attack the United States with a biological weapon.

Chapter Three will discuss the Mexican drug cartels. This chapter will provide a brief history and current snapshot of the major cartels now in existence. The chapter will go on to ask if a cartel is a threat to use a biological weapon against the United States. This question will be answered by looking at the overall ruthlessness, capabilities, and motivations of the cartels.

Chapter Four will consist of a scenario that outlines one of the possible ways that a drug cartel would commit a bioattack against the United States. The scenario will follow scenario planning methodology as described in *Applying Methods and Techniques of Futures Research* and *Mapping the Future*. The scenario will build on Chapter Three by continuing to describe possible attack motivations and the benefits that a cartel would hope to derive from such an attack. The scenario will go into the biological selection process, the bioweapon development plan, and the attack plan. The chapter will also introduce the principles of denial and deception into this thesis and consider different ways that the attacker could use the bioattack to deceive and confuse the target.

Chapter Five will contain indications and warnings that could predict when and how narco-terrorists would launch a biological weapon on the United States. Such indicators will concentrate on the trajectories of a cartel's sophistication and violence. This chapter will also select specific steps from the patterns of other non-state actors who have attempted to use biological weapons, such as the Japanese cult, Aum Shinrikyo, to compare to possible steps that a cartel may take preceding an attack. Chapter Five will also discuss possible signs of deception employed by a cartel and describe how deception might appear to the target.

Chapter Six will conclude the thesis by summarizing the covered material and present the findings and results. Additionally, the chapter will summarize the manner in which the thesis answered the research and key questions. The conclusion will also assess the degree to which the thesis aligned with hypothesis. Finally, the conclusion will include policy recommendations and areas of future research relative to the subject matter of this thesis.

## **CHAPTER TWO**

### **Just an Isolated Case**

#### **OVERVIEW OF THE 2001 ANTHRAX ATTACK**

In 2001, five people were killed from attacks involving anthrax. The anthrax was delivered by letters mailed to Senators Tom Daschle and Patrick Leahy, NBC news anchor Tom Brokaw, and the editor of the New York Post. Additional letters may have been mailed to high profile members of CBS News, ABC News, and American Media, Inc., since employees were infected with anthrax, but no letters were ever found. The letters, however, missed their intended targets, hitting instead random victims that were exposed to anthrax that escaped from its envelopes en route to their target destinations. In addition to the victims, the discovery of anthrax from these letters shut down the U.S. Capitol for months and crippled the U.S. mail system. Billions of dollars have been spent cleaning up the damage, investigating the attacks, treating the victims, and preventing another biological attack. To prevent future attacks, biodefense labs have been built, static security sensors have been installed in high traffic choke points, government bioterrorism projects have been funded, thousands of personnel have been hired in hundreds of different fields, and intelligence and investigations concerning bioattacks have been given a higher priority. America's enemies have taken note on the lives lost and damage caused by such a relatively simple operation. This chapter will discuss the

characteristics of anthrax, the events of the 2001 anthrax attack, and the effects that the attack had on the United States. Additionally, the effects will be viewed from the perspective of a narco-terrorist group that plans to launch a biological attack against the United States in the future.

## **ANTHRAX CHARACTERISTICS**

Anthrax is a bacterium scientifically known as *Bacillus anthracis*. Anthrax is commonly found in nature and regularly infects cows, sheep, and goats. Anthrax can also be found in the soil around the carcasses of infected animals. Anthrax is not transmissible between animals.<sup>23</sup>

### **Anthrax Life Cycle**

While outside of a host organism, Anthrax lies dormant in the form of a spore. As a spore, anthrax is protected by a hard cover that is resistant to extreme environmental conditions. Additionally, while in spore form an anthrax bacterium can exist for years without nutrients or water. Once an anthrax bacterium is in a favorable environment, such as a host animal, it transforms into a vegetative state where it can germinate and multiply.<sup>24</sup> Once in a host, anthrax produces toxins that kill surrounding host cells. As the anthrax multiplies within the host and the number of anthrax cells grows, more toxin is produced by each bacterium and more host cells die. If the infection is successful, then

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<sup>23</sup> Marilyn W. Thompson, *The Killer Strain*, (New York: HarperCollins, 2003), 8.

<sup>24</sup> National Institute of Allergy and Infectious Diseases, "Anthrax," <http://www.niaid.nih.gov/topics/anthrax/Pages/cause.aspx> (accessed on April 19, 2010).

enough damage is done to tissues and organs to kill the host. The death of the host is essential to the survival of the anthrax cells. Since anthrax can not be transmitted directly from host to host, the host must die so that the anthrax cells can be re-introduced into the environment and have the opportunity to infect another animal and multiply further. This is the basic life-cycle of anthrax.<sup>25</sup>

### **Types of Infection**

There are three types of anthrax infection: cutaneous, gastrointestinal, and inhalation. Cutaneous anthrax occurs when anthrax enters the host through an opening in the skin, such as an abrasion or cut. Inhalation anthrax occurs when the host breathes in anthrax spores and they lodge themselves in the lungs. Gastrointestinal anthrax occurs by ingesting anthrax spores.

**Cutaneous Anthrax** Of the three forms of infection, cutaneous is the most common. Naturally occurring cutaneous anthrax generally results from handling body parts of infected animals. Once infected, a small blister forms in one to twelve days.



**Figure 1. Cutaneous Anthrax Infection**

**Source:** Center for Disease Control and Prevention, “Anthrax: Images: Cutaneous Anthrax,” <http://www.bt.cdc.gov/agent/anthrax/anthrax-images/cutaneous.asp> (accessed June 2, 2010).

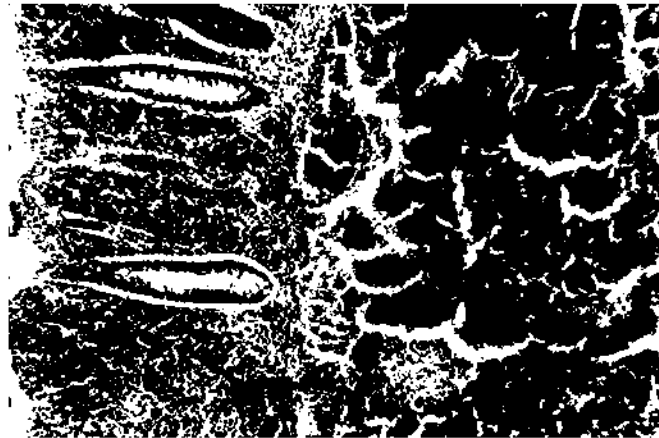
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<sup>25</sup> Thompson, *Killer Strain*, 17.

Untreated, the blister can grow into a large black scab, such as the one in Figure 1.

Headaches and fever may also accompany the skin lesion. From there, the infection can become systemic and spread throughout the body. The survival rate of an untreated victim is 80%. The survival rate climbs to 99% if the victim is treated with antibiotics.<sup>26</sup>

**Gastrointestinal Anthrax** Eating undercooked anthrax-contaminated meat causes gastrointestinal anthrax. At one to seven days after exposure, initial symptoms, including lesions in the mouth and throat, fever, and swollen or painful lymph nodes, arise. Anthrax bacteria that reach the lower intestine may cause abdominal pain and bloody diarrhea. The survival rate is 40-75%.<sup>27</sup> Figure 2 is an example of an anthrax infection of the large intestine causing a hemorrhage of the mucosa and submucosa.



**Figure 2. Histopathology of Anthrax Infection of Large Intestine**  
**Source:** eMedicine, “CBRNE-Anthrax Infection,” under “Clinical,”  
<http://emedicine.medscape.com/article/830004-overview> (accessed June 3, 2010).

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<sup>26</sup> Burt Anderson, Herman Friedman, and Mauro Bendinelli, ed., *Microorganisms and Bioterrorism*, (New York: Springer, 2006), 84.

<sup>27</sup> Anderson, Friedman, and Bendinelli, eds., *Microorganisms and Bioterrorism*, 85.

**Inhalation Anthrax** Inhalation anthrax is the most fatal of the three modes of infection. Untreated, the survival rate is 10-20%. Historically, textile workers and ranchers have acquired inhalation anthrax by breathing in aerosolized spores while handling and processing infected animal hides.

Within two to sixty days of when the spores are inhaled, the victim experiences fatigue, soreness, and fever. With inhalation anthrax, spores deposit deep in the lungs and transform into vegetative cells and germinate. These cells release toxins that begin destroying surrounding lung tissue. Such tissue damage causes swelling and fluid accumulation as illustrated in Figure 3. Once in the lungs, macrophages (immune cells)



**Figure 3. Chest X-ray of Mediastinal Widening and Pleural Effusion Caused by Inhalation Anthrax Infection**

*Source:* Center for Disease Control and Prevention, “Anthrax: Images: Inhalation Anthrax,” <http://www.bt.cdc.gov/agent/anthrax/anthrax-images/inhalational.asp> (accessed June 3, 2010).

attack and encapsulate the bacteria, but do not kill it. Instead, the macrophages transport active anthrax to the lymph nodes. While in the lymph nodes or en route, the macrophages send a signal to T-cells ordering them to destroy the macrophage. The T-cells do so and release the active anthrax in the lymph nodes or other parts of the body.



From the lymph nodes, the bacteria have access to the entire lymphatic and circulatory systems and have the opportunity to infect multiple organs.<sup>28</sup>

## **SEQUENCE OF EVENTS FROM SEPTEMBER TO NOVEMBER 2001**

### **First Phase**

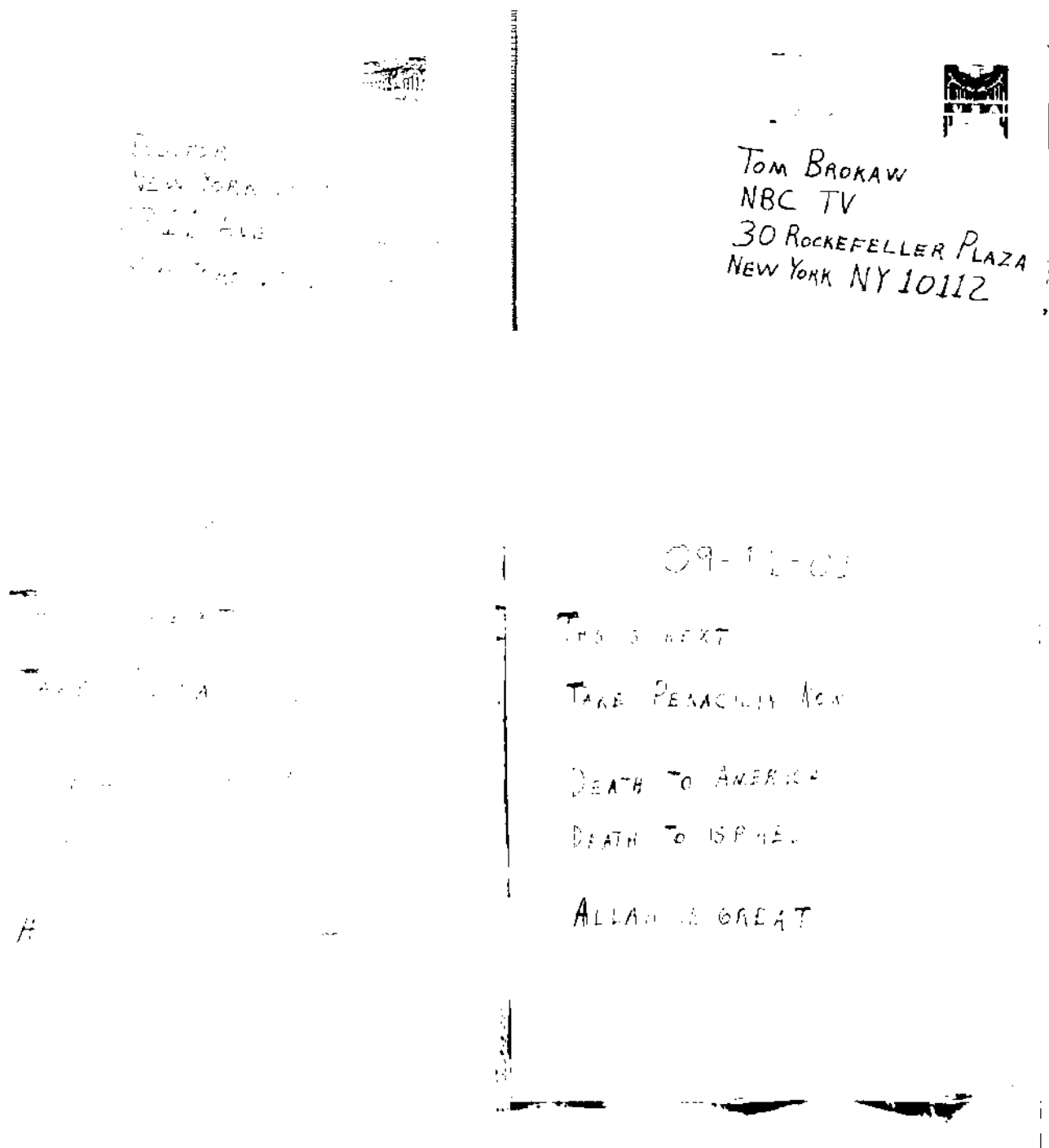
The first biological weapon attack on the United States began on the 17<sup>th</sup> or 18<sup>th</sup> of September, 2001. Two envelopes containing a threat letter and anthrax were mailed from a mailbox on Nassau Street in Trenton, New Jersey between 5:00pm, September 17<sup>th</sup> and noon on September 18<sup>th</sup>.<sup>29</sup> These envelopes were mailed to Tom Brokaw, the news anchor at NBC News, and to the “Editor, New York Post”.

These envelopes and letters would eventually be recovered. Both letters were identical (photographs of which are contained in Figure 4 on the following page). In addition to these letters, at least one other letter was mailed at approximately the same time. It is known with almost certitude that, based on the infection timeframe and level of contamination, another letter was mailed to the National Enquirer, which is owned by American Media, Inc (AMI) and is headquartered in Boca Raton, Florida. This letter was never recovered. It is also possible that letters containing anthrax were mailed to ABC News and CBS News. However, it is equally possible that the presence of anthrax at the

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<sup>28</sup> Darin Steele, interview by author, Washington, D.C., April 22, 2010.

<sup>29</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 4, <http://www.justice.gov/amerithrax/docs/amx-investigative-summary.pdf> (accessed April 19, 2010)



**Figure 4. Anthrax Letters to New York Post Editor and Tom Brokaw**  
*Source:* FBI, "Anthrax Letters," <http://www.fbi.gov/pressrel/pressrel01/102301.htm> (accessed June 3, 2010).

offices of ABC News and CBS News was due to cross-contaminated mail.<sup>30</sup>

On October 4<sup>th</sup>, 2001 news arose that Robert Stevens, an employee at AMI, had somehow contracted anthrax. Since the 9/11 attacks had just recently occurred, officials felt that they should downplay the seriousness of Stevens infection. Later on October 4<sup>th</sup>, Health and Human Services Secretary Tommy Thompson stated in a press briefing that the Stevens case was an isolated event and that bioterrorism was not suspected.<sup>31</sup> Stevens died from his infection on October 5<sup>th</sup>. No one yet knew, but Stevens was the first fatality of the anthrax mailings.

### **Second Phase**

In spite of official and media reassurances that Stevens was an isolated and benign event, investigators began to suspect on October 10<sup>th</sup> that the presence of anthrax in the AMI building was due to the deliberate mailing of spores.<sup>32</sup> These suspicions would soon be validated, because, on October 9<sup>th</sup>, more envelopes containing anthrax were mailed, launching the second phase of the attack. The letters were postmarked Trenton, New Jersey and were processed at the Hamilton, New Jersey Processing and Distribution Center. These letters were addressed to Tom Daschle, the Democratic Senator from South Dakota, and Patrick Leahy, the Democratic Senator from Vermont.

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<sup>30</sup> Darin Steele, interview by author, Washington, D.C., April 22, 2010.

<sup>31</sup> Leonard Cole, *The Anthrax Letters* (Washington, D.C.: Joseph Henry Press, 2003), 18.

<sup>32</sup> R. William Johnstone, *Bioterror: Anthrax, Influenza, and the Future of Public Health Security* (Westport, CT: Praeger Security International, 2008), 8.

The return address was, "4<sup>th</sup> Grade, Greendale School, Franklin Park NJ 08852".<sup>33</sup>

(Photographs of which are contained in Figure 5 below).

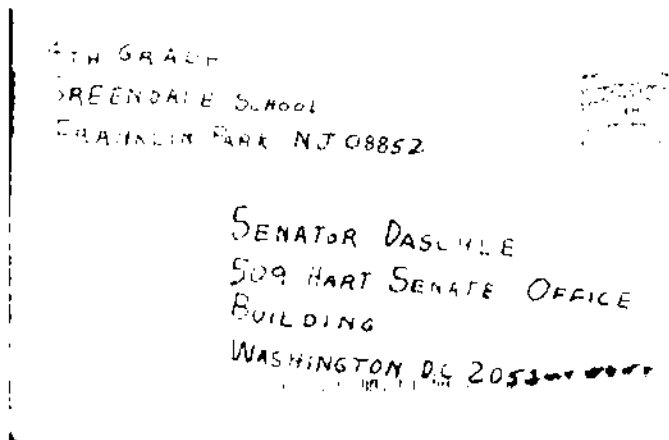
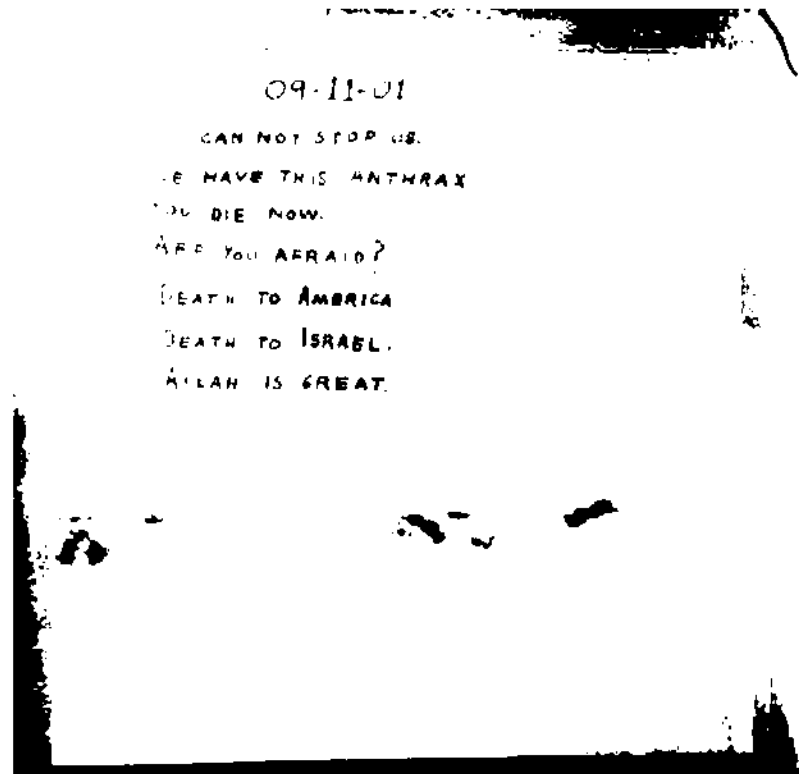
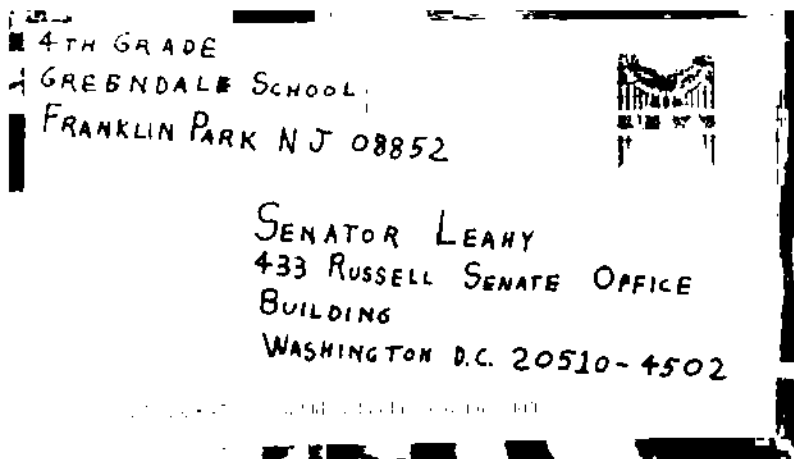


Figure 5. Anthrax-containing Letters Mailed to Senators Leahy and Daschle

Source: FBI, "Anthrax Letters," <http://www.fbi.gov/pressrel/pressrel01/102301.htm> (accessed June 3, 2010).

On October 14<sup>th</sup>, two Hamilton, New Jersey postal facility workers, Patrick O'Donnell and Norma Wallace, began showing symptoms of anthrax infection. On

<sup>33</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 3.

October 15<sup>th</sup>, Jyotsna Patel, another Hamilton facility employee, began exhibiting symptoms.<sup>34</sup>

Also on October 15<sup>th</sup>, an intern opened the October 9 letter addressed to Senator Daschle. Once opened, white powder anthrax spilled from the letter. Twenty-eight people were exposed to the anthrax from this letter.<sup>35</sup> Although no one who was exposed became infected due to the quick response and treatment, this level of exposure shows how quickly and easily the anthrax spread from a letter that was contained minutes after it was opened.

On October 16<sup>th</sup>, Leroy Richmond, Thomas Morris, Joseph Curseen, and an unnamed person, four postal employees who worked at the Washington, D.C. Brentwood facility, began exhibiting initial symptoms of anthrax infection.<sup>36</sup> Richmond's inhalation

anthrax infection would be confirmed on October 21<sup>st</sup>. As a result, the mail processing floor of the Brentwood facility and the Anne Arundel County facility in Maryland, where Richmond worked, were closed.<sup>37</sup> Joseph Curseen died on October 22<sup>nd</sup>. His infection was confirmed on October 26<sup>th</sup>.<sup>38</sup>

On October 17<sup>th</sup>, Linda Burch, who worked at a New Jersey accounting office, displayed symptoms of infection. The accounting firm received mail directly from the Hamilton postal facility. Burch was likely exposed to anthrax by cross-contaminated

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<sup>34</sup> Johnstone, *Bioterror*, 10.

<sup>35</sup> *Ibid.*

<sup>36</sup> *Ibid.*

<sup>37</sup> *Ibid.*, 12.

<sup>38</sup> *Ibid.*, 13.

mail. It is not known with certainty if Burch was exposed to the September or October letters.<sup>39</sup>

Teresa Heller, Claire Fletcher, Richard Morgano, and Johanna Huden were all infected with anthrax from the first mailings, developed symptoms early on, but were not diagnosed until much later. The delayed diagnoses caused initial confusion about which letter infected these victims. Heller, a West Trenton, New Jersey mail carrier, developed cutaneous anthrax symptoms on September 29<sup>th</sup>, but was not diagnosed until October 18<sup>th</sup>. Fletcher, a CBS News mail handler, showed signs of cutaneous anthrax on October 1<sup>st</sup>, but also was not diagnosed until October 18<sup>th</sup>. Morgano, a Hamilton facility postal worker, also was diagnosed on the 18<sup>th</sup> in spite of showing symptoms of cutaneous anthrax on September 26<sup>th</sup>. As a result of Morgano's diagnosis, the Hamilton facility was shut down.

On October 19<sup>th</sup>, *New York Post* reporter Johanna Huden was diagnosed as having cutaneous anthrax. Huden, however, was symptomatic beginning on September 22<sup>nd</sup>, making her the first victim infected by the attack.<sup>40</sup>

In addition to Huden's diagnosis, the letter addressed to "Editor, New York Post" was found unopened on October 19<sup>th</sup>.<sup>41</sup> This letter was found a month, possibly to the day, after it was mailed. By this time, two employees had already developed symptoms of cutaneous anthrax. One more mailroom employee would become infected several days after the letter was removed the Post building. This incident represented the ability of the anthrax to contaminate an area and remain infectious.

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<sup>39</sup> Cole, *Anthrax Letters*, 92.

<sup>40</sup> *Ibid.*, 53.

<sup>41</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 4.

Brentwood postal facility employee Thomas Morris was admitted into the hospital on October 21<sup>st</sup> with suspected inhalation anthrax. Morris died later that day. His diagnosis of inhalation anthrax was confirmed on October 23<sup>rd</sup>.<sup>42</sup> Morris, along with another Brentwood employee who was diagnosed with inhalation anthrax on October 22<sup>nd</sup>, was infected by one of the second phase letters.<sup>43</sup>

On October 22<sup>nd</sup> and 23<sup>rd</sup>, two *New York Post* mail room employees were diagnosed with cutaneous anthrax. The symptoms of the October 22<sup>nd</sup> victim arose on October 19<sup>th</sup>, but investigators assumed that both people were the victims of the September mailings.<sup>44</sup>

David Hose, who worked in the mail room of the Northern Virginia State Department annex, showed signs of inhalation anthrax infection on October 21<sup>st</sup>.<sup>45</sup> He was most likely exposed to the Leahy letter, which was still undiscovered when he became symptomatic. The Leahy letter was erroneously routed to the annex since the zip code was misread. The letter would then be routed to the Capitol. The letter was found on November 16<sup>th</sup>.<sup>46</sup>

### **Random Contamination**

Kathy Nguyen, a New Yorker who had no direct connection to anywhere that the anthrax letters had travelled to or through, was suspected of contracting inhalation

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<sup>42</sup> Johnstone, *Bioterror*, 12.

<sup>43</sup> *Ibid.*, 13.

<sup>44</sup> *Ibid.*, 14.

<sup>45</sup> Cole, *Anthrax Letters*, 67.

<sup>46</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 4.

anthrax when she checked into a hospital on October 28<sup>th</sup>. The diagnosis was confirmed on October 30<sup>th</sup> and she died on October 31<sup>st</sup>. Investigators assessed that her mail was cross-contaminated by anthrax from one of the anthrax letters.<sup>47</sup>

Ottillie Lundgren, a 94 year-old woman who rarely left her Connecticut home, was another victim of cross-contaminated mail and the last known fatality of this bioweapon attack. She checked into a hospital on November 16<sup>th</sup>. On November 21<sup>st</sup> she was confirmed to have had inhalation anthrax and died later that day. Anthrax spores were found on the mail sorters at the Connecticut mail center that processed her mail.<sup>48</sup>

The anthrax attack of 2001 can be viewed as a precision guided missile attack, where the poison envelopes served as the projectiles that were launched from Trenton, New Jersey and targeted New York City, Washington, D.C., and Boca Raton, Florida. The projectiles' contrails, however, were just as dangerous as the actual projectiles. Based on the addressees on the envelopes, the attack missed its intended targets. Instead, it infected those who crossed the trails left by the envelopes. The deadly trail of the letters can be traced on Figure 6 on the following page. Additionally, Figure 6 shows how the letters missed their intended targets and, instead, hit those that were most vulnerable to an attack that transformed mail delivery into a guidance system: the postal facility workers. During the two month duration of the attack, five people were killed and twenty-two were infected with either cutaneous or inhalation anthrax. Additionally, numerous buildings were contaminated by the anthrax trails left behind. Some of these buildings were shut down for years and millions of dollars were spent to decontaminate

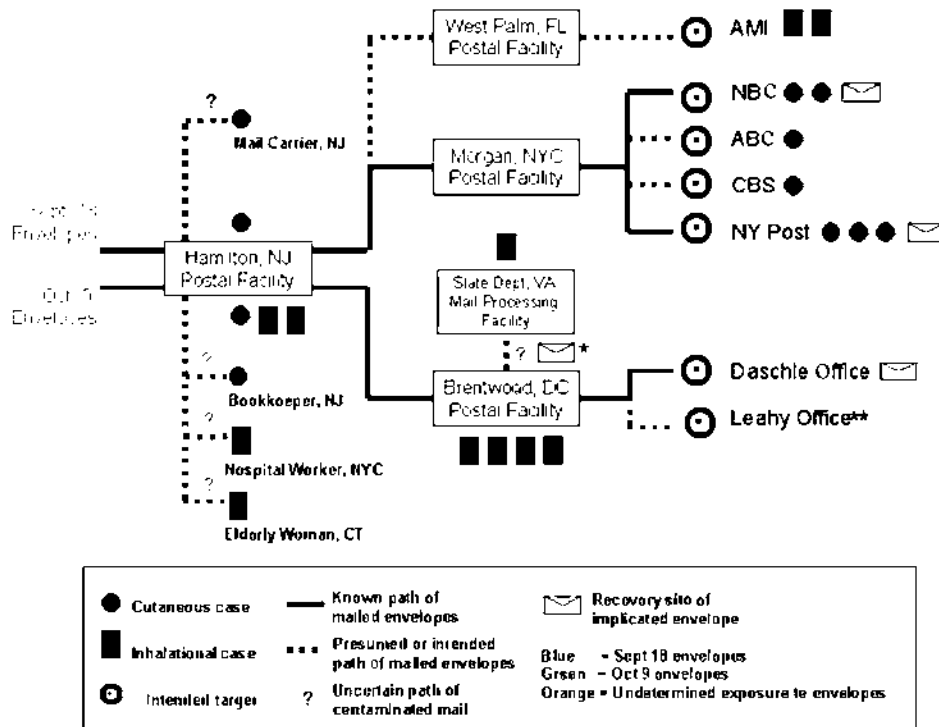
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<sup>47</sup> Anthony H. Cordesman, *The Challenge of Biological Terrorism* (Washington, D.C.: CSIS Press, 2005), 19.

<sup>48</sup> Cole, *Anthrax Letters*, 104-109.



and repair them. Furthermore, the attack generated a level of fear from the public, the media, and the government that was extremely disproportionate to the miniscule death toll. An entire nation was put on high alert, spending (and continuing to spend) billions of dollars to prevent this attack from occurring again.



**Figure 6. Path of September 18th and October 9th Letters**

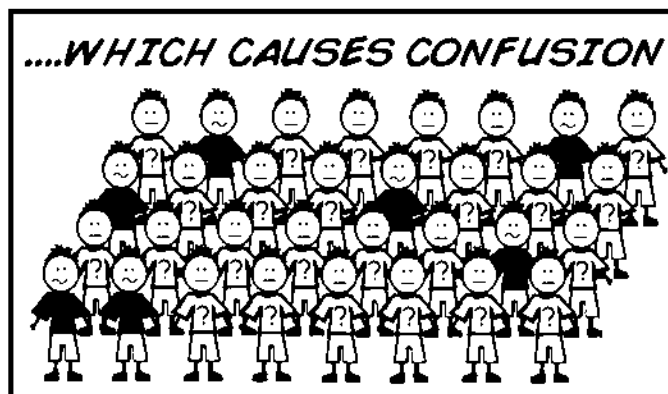
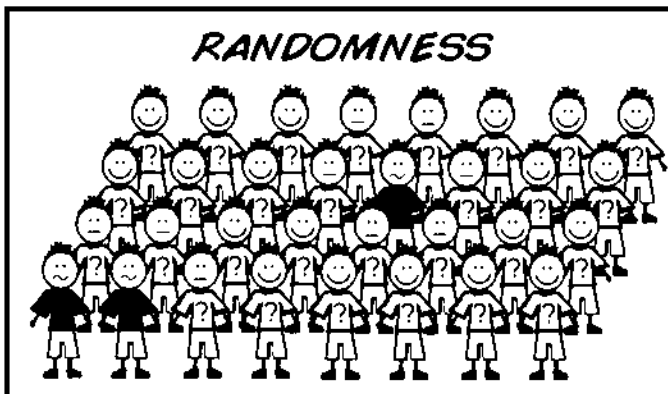
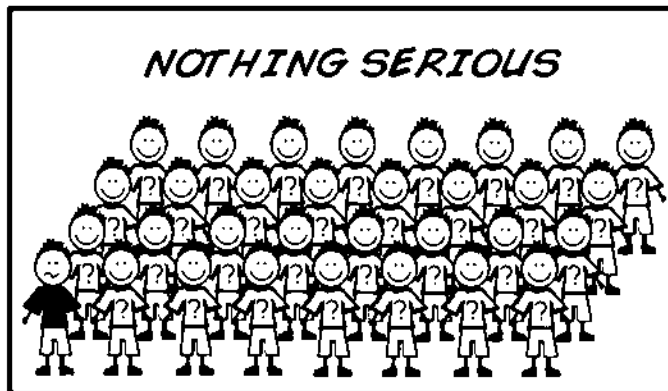
**Source:** Kimberly M. Thompson, Robert E. Armstrong, and Donald F. Thompson, *Bayes, Bugs, and Bioterrorists: Lessons Learned from the Anthrax Attacks* (Washington, D.C.: National Defense University Center for Technology and National Security Policy, 2005), 28, <http://www.ndu.edu/CTNSP/ducUploaded/DTP14%20Bayes%20Bugs%20Bioterrorists.pdf> (accessed June 3, 2010).

## **IMPACT ON THE UNITED STATES**

The anthrax attack affected the United States in a variety of ways. The attack can not be considered successful because the intent of the attacker remains unknown. Instead, the attack's effects must be analyzed to discern its impact on the United States. The different ways that the attack affected the country would be important to narco-terrorists who would consider launching a biological attack on the United States in the future. Fatalities, casualties, fear, infrastructure damages (contamination), government costs, and overall economic damage are primary effects of the attack that narco-terrorists would examine further. Depending on the goals of a drug trafficking organization and the objectives of its bioattack, it would modify the magnitude of each of these effects.

### **Fear**

The realization that the anthrax infections were the result of an attack started off rather quietly, even though the 9/11 attacks happened within weeks of the diagnoses. This fact is due to three circumstances. First, diagnoses of the infections as anthrax took a while. Determining the cause of the anthrax also took a while. Additionally, the sequential order that the anthrax victims were diagnosed was spread out geographically. Since it was spread out, different health agencies would be responsible for diagnosing, investigating, mitigating, and reporting the infections. Therefore, it took time for the news, and concern, to disseminate.



This figure illustrates the evolution of fear in the minds of the general population and the government officials responsible for the public's well-being during the beginning phases of the anthrax attacks. Fear was generated due to the random dispersal of victims and the confusing order in which victims were discovered. The first fatality, Robert Stevens, was dismissed as a natural occurrence and everyone remained calm (represented by all of the smiling faces). However, Ernesto Blanco's suspected anthrax infection and discovery of anthrax spores at Blanco's and Stevens' workplace, AMI, caused officials to become more suspicious of a deliberate pathogenic release and

Figure 7. How the Anthrax Attack Caused Fear in the Population

the calm disposition faded slightly (represented by slightly fewer smiling faces). Once more victims confirmed that the anthrax infections were not natural or accidental, calm disappeared completely (represented by no smiling faces).

To compound the problem, it was discovered that Robert Stevens was not the first victim of the attack. Johanna Huden developed cutaneous anthrax eight days before Stevens' symptoms became public.<sup>49</sup> Huden, however, was not diagnosed until October 19<sup>th</sup>; almost a month after the onset of her symptoms and two weeks after Steven's death.<sup>50</sup> This example illustrates the geographic randomness (Huden was infected in New York City and Stevens was infected in Boca Raton, Florida) of the attack and the lack of sequential order relative to disease onset and victim discovery. This randomness caused confusion and the lack of order made it difficult to establish a pattern while it was happening. Confusion was expressed to the public through the media. The public had to face the unknown due to the confusion and lack of answers. Americans did not know who was responsible for this attack, exactly how this attack happened, what the next phase of the attack would be, or when it would happen. Fear of the unknown led Americans to worry about what would happen next.

Dread and concern felt by Americans during the anthrax attack can best be quantified by the actions that they took when they were afraid. When people are afraid, a common reaction is to defend against the threat. In the case of the anthrax attack, defending against the attack could include such actions as getting screened for anthrax at the hospital, getting antibiotics, buying protective personal equipment (gas masks and protective suits), and haphazardly securing buildings.

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<sup>49</sup> Cole, *Anthrax Letters*, 1-3, 21, 53.

<sup>50</sup> Ibid.

To gain a relative perspective about the magnitude of the defense reactions to the anthrax attacks, it is helpful to compare medical statistics to those of the sarin attack conducted by the cult, Aum Shinrikyo, in Tokyo, Japan on March 20<sup>th</sup>, 1995. The sarin attack occurred on several Tokyo subway trains, killing twelve people and injuring 5,000.<sup>51</sup>

To understand the full effects of fear caused by the anthrax and sarin attacks, it is important to discuss the worried well. The worried well seek medical treatment after a terrorist attack out of fear or concern that they may be injured even though they display no wounds or symptoms. This category of patient could potentially be huge after an attack and the numbers could vary erratically, even between similar attacks. The worried well could number up to twenty times more than those actually infected and have the capability to swamp a hospital or local medical infrastructure.<sup>52</sup> During the Tokyo attacks, 85% of the patients were suffering from anxiety or psychosomatic issues and displayed no symptoms of sarin exposure.<sup>53</sup> The worried well outnumbered the victims of sarin exposure 4,000 to 1,000.<sup>54</sup>

Comparatively, after the initial realization of the anthrax attack, 32,000 people began antibiotic treatment.<sup>55</sup> Not all of these people can be considered worried well,

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<sup>51</sup> Cordesman, *Challenge of Biological Terrorism*, 16.

<sup>52</sup> U.S. Air Force, Counterproliferation Center, *The "Worried Well" Response to CBRN Events: Analysis and Solutions*, by Fred P. Stone, Future Warfare Series no. 40, Air University (Maxwell, AL: Air University, 2007), 1, <http://www.au.af.mil/au/awc/awcgate/cpc-puhs/stone.pdf> (accessed June 3, 2010).

<sup>53</sup> Jonathan B. Tucker, "What the Anthrax Attacks Should Teach Us," Hoover Institution, under "Establish Systems for Triage in the Event of an Attack," <http://www.hoover.org/publications/digest/4478206.html> (accessed June 4, 2010).

<sup>54</sup> Pamela L. Griset and Sue Mahan, *Terrorism in Perspective* (Thousand Oaks, CA: Sage Publications, 2003), 300.

because many of them were instructed by public health officials to take them. However, this number still represents fear of infection, not fear for one's self but fear for others. When public officials or medical professionals exercise unsolicited caution out of fear of high casualties or spread of infection, it becomes a sort of institutional fear that can still lead to panic and overtaxing of the medical infrastructure. This type of fear could be more damaging than fear felt and acted upon by individuals. Some reports, however, state that Ciprofloxacin (the antibiotic taken to cure anthrax infections) sales increased 300%-600% after the anthrax attack, which illustrate that individuals did act out of fear.<sup>56</sup>

Besides the worried well, many other Americans also felt fear. In fact, a poll released by ABC and the *Washington Post* on October 16<sup>th</sup>, 2001 stated that 54% of those polled were "very" or "somewhat" worried that a friend, relative, or they would be an anthrax victim.<sup>57</sup> This outcome is fascinating considering that, by October 16<sup>th</sup>, only one person had died from the attack. Furthermore, it was an attack that used a pathogen that was preventable and curable. These results are even more amazing considering that the attack's delivery system was very precise- the targets' names were literally all over it.

**What the Attack Could Teach the Cartel about Fear** Fear is a difficult quality to measure and may be impossible to accurately quantify. Furthermore, contradictory reports have been written about the relative amount of fear caused by the 2001 anthrax attacks. One variable that skews the degree of fear caused by the anthrax attack is its

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<sup>55</sup> Douglas M. Stetson and Heather L.W. Noell, "Worried Well: State of Research, Proposed Metrics, Promising Modeling Directions, and Requirements for Experimentation," [http://www.dodccrp.org/events/12th\\_ICCRTS/Abstracts/146.pdf](http://www.dodccrp.org/events/12th_ICCRTS/Abstracts/146.pdf) (accessed June 4, 2010).

<sup>56</sup> Kathryn Balint, "Online Pharmacies Flooded with Antibiotic Orders," *The San Diego Union Tribune*, October 13, 2001, [http://legacy.signonsandiego.com/news/nation/terror/20011013-9999\\_1n13cipro.html](http://legacy.signonsandiego.com/news/nation/terror/20011013-9999_1n13cipro.html) (accessed June 4, 2010).

<sup>57</sup> Johnstone, *Bioterror*, 11.

temporal proximity to the 9/11 attacks. Some experts have relied on figures to argue that the American public was surprisingly calm during the anthrax attack. Meanwhile, other experts have shown figures that many Americans took extreme safety precautions out of fear of already being infected or possibly becoming infected.

What must not be overlooked, however, is that these attacks were somewhat primitive and inefficient. Only five people died and twenty-two infected. Additionally, it is unknown whether these attacks were conducted to scare the public or if causing fear was even a goal. Even when adding the number of people who were exposed to the anthrax to the numbers of infected and killed, the result is still a miniscule percent of the population. If an American in late 2001 or early 2002 were to calculate his chances of becoming infected based on the numbers already infected, then he would know that he had very little to worry about. However, compared to the risk of infection, a very disproportionate amount of people were afraid of infection and took precautions based on that fear.

The delivery system used in the 2001 attack did not realize the potential inherent in any biological attack to cause fear and panic on a national scale. As mentioned before, however, no one knows whether fear was a primary purpose of the attack. Future attackers could build on the 2001 attack and take steps that would cause many more people to feel a greater amount of fear. Those steps could involve using a transmissible or more infective agent and manipulating the media through constantly communicating misleading messages and future plans for more attacks.

The lesson that drug cartels could take from the attack is that multiple phases should occur to amplify the fear exponentially. Multiple phases could be used to deceive

the public into thinking that multiple groups are involved in the attack, increase the random nature of the attack, and keep the population wondering when the attack will end. These points would all increase the sense of the unknown. Part of the fear from the anthrax attacks was caused by the unknown. The attacker was unknown. Was it the same people responsible for 9/11? Was it someone else? Was it a group? Was it a lone person? The intent was not revealed. Why is this happening? What will make it stop? The scale of the attack was unknown; how many letters were sent? Since the letters were not discovered all at once but one at a time, the duration of the attack was unknown; how much longer will letters be sent? The power of the unknown affected the United States much more than the tangible effects of the attack.

### **Fatalities and Casualties**

The lethality of the attacks is the most tangible effect and the easiest to measure. Five people were killed, all by inhalation anthrax.<sup>58</sup> Twenty-two were infected, half by cutaneous anthrax and half by inhalation anthrax.<sup>59</sup> That amounts to a 45% mortality rate for inhalation anthrax and a 23% overall mortality rate for the attack. Thirty-one people tested positive for exposure.<sup>60</sup> Two of the dead, Kathy Nguyen and Otilie Lundgren, never even came close to the areas where the anthrax letters had been.<sup>61</sup> The anthrax came to them instead, by spores that were shipped to them on cross contaminated mail. Although only four letters were found at the NBC News and New York Post offices in

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<sup>58</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 2.

<sup>59</sup> Ibid.

<sup>60</sup> Ibid., 3.

<sup>61</sup> Cordesman, *Challenge of Biological Terrorism*, 19; Cole, *Anthrax Letters*, 104-109.



New York City and the U.S. Capitol in Washington, D.C., it is officially believed that three more were mailed to the ABC News and CBS News offices in New York City and the AMI building in Boca Raton, Florida. That makes seven envelopes mailed. These letters together contained a quarter ounce of anthrax.<sup>62</sup> The equivalent of two tablespoons of anthrax endangered 30,000 people, exposed thirty-one people, infected twenty-two, and killed five.<sup>63</sup>

All of these figures represent different perspectives. Some people may think that five dead is not that bad. Others may think that 30,000 people whose lives were jeopardized by two tablespoons of powder is inconceivable. Former Senator Bob Graham and Chairman of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism has stated that attacking a large city with two to three pounds of anthrax would kill more people than the number of Americans who died in World War II.<sup>64</sup> Of course, this depends on the delivery system. Some experts believe that one anthrax spore could kill a person.<sup>65</sup> In light of this, some may think that the country is lucky that the attack depended on such an inefficient delivery system as envelopes and the postal system, which only killed five people.

If a Mexican narco-terrorist group wanted to launch a bioattack on the United States for the purpose of killing large numbers of people, then it is unlikely that it would

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<sup>62</sup> U.S. Department of Health and Human Services, National Institute of Allergy and Infectious Diseases, *NIAID IDs and Policy Digest 10/28/08-10/31/08 AM*, by Judith Miller, "City Journal: Bioterrorism's Deadly Math/ Despite billions spent, we're not yet ready for a big attack," 12, [https://www.opensource.gov/portal/server.pt/gateway/PTARGS\\_0\\_0\\_200\\_203\\_121123\\_43/content/Display/9979272/FBS20081031540681.pdf](https://www.opensource.gov/portal/server.pt/gateway/PTARGS_0_0_200_203_121123_43/content/Display/9979272/FBS20081031540681.pdf) (accessed through opensource.gov on June 4, 2010).

<sup>63</sup> Senator Bob Graham, "Preventing a Greater Threat," *New York Times*, November 18, 2008, [http://www.nytimes.com/2008/12/18/opinion/18iht-edgraham.1.18791453.html?\\_r=2](http://www.nytimes.com/2008/12/18/opinion/18iht-edgraham.1.18791453.html?_r=2) (accessed on June 4, 2010).

<sup>64</sup> Senator Bob Graham, "Prepare for an Attack," *Miami Herald*, December 6, 2009, <http://www.miamiherald.com/2009/12/06/1366865/prepare-for-an-attack.html> (accessed on June 4, 2010).

<sup>65</sup> Darin Steele, interview by author, Washington, D.C., April 22, 2010.

emulate the delivery system or use the same agent as the 2001 attack. The narco-terrorists would prefer a more effective delivery system that would spread the agent to a larger number of people or would kill more who were exposed. Additionally, they would also choose a system that gave the victims less warning. In the 2001 attacks many of the victims knew that they were in danger once they opened the envelopes and saw the white powder on a threat letter. Such a warning cut down on the numbers of people killed and infected.

Experts and those involved with the case have almost unanimously agreed that a highly skilled scientist with specialized equipment created the anthrax used in the attacks. A narco-terrorist group seeking to achieve a high body count would view the five fatalities of the 2001 attack as a waste of resources and expertise. A group looking for a high death toll would want a better return on its investment. Thus, it would look for a deadlier agent or one that is easier to manufacture.

### **Government Costs and Economic Damage**

According to the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, \$50 billion has been spent on bioterrorism by the U.S. government since 2001.<sup>66</sup> A Center for Disease Control (CDC) program to fund bioterrorism preparedness and response capabilities in each state has twenty times the funding that it did before the 2001 attacks.<sup>67</sup> Rutgers professor and author of *The Anthrax Letters*, Leonard Cole, estimates that the anthrax attacks caused \$6 billion in

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<sup>66</sup> *World at Risk*, 25.

<sup>67</sup> U.S. Government Accountability Office, summary of *Bioterrorism: Information on Jurisdictions' Expenditure and Reported Obligation of Program Funds*, <http://gao.gov/products/GAO-05-239> (accessed June 4, 2010).

economic damage.<sup>68</sup> The 2001 attacks damaged the U.S. government and national finances in several ways. The government had to spend money on decontaminating all of the buildings that the letters passed through, creating contingencies to keep the government functioning in spite of closed down facilities and limited capabilities, investigating the attack, developing countermeasures against the attack, and defending against future bioterrorism. Additionally, the United States lost revenue from closed down postal facilities, less mail sent, and people missing work. The tallying of the economic damages of the anthrax attacks to the United States may not be exhaustive but it is thorough enough to provide an accurate picture of the financial toll. From that picture a detailed analysis can show the consequences of a well funded and coordinated attack that is designed exclusively or primarily to force the government to spend on decontamination and defense against another attack. Such an attack would further tax the American public and divert funds from important programs.

**Decontamination** The anthrax letters contaminated thirty-five postal facilities and commercial mailrooms and seven Capitol Hill Buildings.<sup>69</sup> The judicial and legislative branches of the U.S. government were completely shut down for a short period of time and partially incapacitated for a number of years. Total decontamination of federal buildings took three years and cost more than \$300 million.<sup>70</sup> Fifteen federal and local agencies were involved in the Capitol decontamination.<sup>71</sup> The Environmental

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<sup>68</sup> *World at Risk*, 8.

<sup>69</sup> U.S. Department of Justice, *Amerithrax Investigative Summary*, 3.

<sup>70</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 13; Senator Bob Graham and Senator Jim Talent, "Lessons Learned from the Anthrax Attacks," *Washington Times*, July 30, 2009, <http://www.washingtontimes.com/news/2009/jul/30/lessons-learned-from-the-anthrax-letters/> (accessed June 4, 2010).

Protection Agency (EPA) alone spent \$27 million on cleaning up the Capitol Hill buildings.<sup>72</sup>

Anthrax is a very effective contaminant that can deny access to large areas for long periods and damage buildings. This is because anthrax is a very durable bacteria that can survive in harsh conditions. Most other agents quickly destabilize when placed in a foreign environment. Anthrax, however, can settle into almost any environment and wait to infect a host for years. Without decontamination, spores of anthrax could remain in a Capitol Hill building for decades until re-aerosolized by some physical disturbance after which they could infect a staffer or member of Congress. Several years and hundreds of millions of dollars were spent undoing the damage caused by just a fraction of a gram of anthrax that spilled out of a few envelopes. The National Counterterrorism Center (NCTC) stated that cleaning up two to three pounds of anthrax could cost \$1.8 trillion.<sup>73</sup> Lawrence Wein, a Stanford University business school professor, estimated that it would take 314 years and \$20 billion to decontaminate a large-scale aerosolized anthrax attack on New York City if conventional cleanup techniques were used.<sup>74</sup>

**Postal Costs and BioWatch** In terms of contamination and fatalities, the United States Postal Service (U.S.P.S.) was the agency that was the hardest hit by the anthrax attacks. In addition to the cleanup costs, the U.S.P.S.'s revenue for the period between

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<sup>71</sup> U.S. Environmental Protection Agency, Region 3 Philadelphia, Pennsylvania, *Federal On-scene Coordinator's Report for the Capitol Hill Site Washington, DC*, 18-19, <http://www.epaosc.org/sites/DCN000305703/files/osc%20report.pdf> (accessed on June 4, 2010).

<sup>72</sup> U.S. Government Accountability Office, summary of *Capitol Hill Anthrax Incident: EPA's Cleanup Was Successful; Opportunities Exist to Enhance Contract Oversight*, <http://gao.gov/products/GAO-03-686>.

<sup>73</sup> Graham, "Prepare for an Attack."

<sup>74</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 19.

September 8, 2001 and November 30, 2001 was \$876 million less than expected.<sup>75</sup> To prevent further attacks, the U.S.P.S. spent \$74.7 million from November 2001 to April 2008 on irradiating D.C. area federal mail.<sup>76</sup> Since then, mail irradiation procedures have increased mail delivery times. Additionally, the U.S.P.S. spent \$375 million in 2005 to install 1373 Biohazard Detection Systems in 282 Postal Sorting and Distributions Centers throughout the country.<sup>77</sup>

In addition to the money spent by the U.S.P.S. on biological sensors, the Department of Homeland Security spent \$400 million on sensors for the BioWatch program from 2003 to 2008.<sup>78</sup> The BioWatch program is a network of biological air samplers set up in strategic points of the major U.S. cities. The air samplers contain filters that are removed daily and taken to be analyzed for the presence of specific airborne pathogens. Due to the manual removal and analysis of these filters, detection of a bioattack agent could take at least thirty-six hours.<sup>79</sup>

**Biological Countermeasures and Biodefense Labs** In the event that there is no sufficient warning of a biological attack, countermeasures need to be implemented. One countermeasure is an amount of vaccines capable of protecting the U.S. population against infection. Since many different pathogens can be used in a biological attack, it is important to have vaccines for as many pathogens as possible. One of those pathogens is

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<sup>75</sup> U.S. Government Accountability Office, *U.S. Postal Service: Deteriorating Financial Outlook Increases Need for Transformation*, 8, <http://www.gao.gov/new.items/d02355.pdf> (accessed June 4, 2010).

<sup>76</sup> U.S. Government Accountability Office, summary of *United States Postal Service: Information on the Irradiation of Federal Mail in the Washington, D.C., Area*, <http://gao.gov/products/GAO-08-938R> (accessed June 4, 2010).

<sup>77</sup> Anne L. Clunan, Peter R. Lavoy, and Susan B. Martin, ed. *Terrorism, War, or Disease?* (Stanford: Stanford University Press, 2008), 32.

<sup>78</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 17.

<sup>79</sup> Ibid.

smallpox. Many experts fear the use of smallpox as a bioweapon because of its horrendous physical effects and because much of today's population is vulnerable since smallpox vaccinations ceased years ago. As a result of this concern, the U.S. government increased the amount of smallpox vaccine available to Americans. After 9/11 and the anthrax attacks, the number of doses grew from 90,000 to 300 million at a cost of over \$1 billion.<sup>80</sup>

In addition to the smallpox vaccine initiative, the U.S. government enacted Project BioShield in 2004 as a program responsible for national medical countermeasures against a biological attack. Project BioShield is responsible for adding therapeutic, preventative, and diagnostic medical equipment and medication to the Strategic National Stockpile through research, development, and acquisitions. The Strategic National Stockpile is a medical supply designed to reach all Americans in the event of a bioattack.<sup>81</sup> In 2003, Congress appropriated \$5.6 billion for the BioShield Special Reserve Fund.<sup>82</sup> According to the 2010 Prevention of WMD Proliferation and Terrorism Report Card, however, the cost to develop medical countermeasures to priority threats is \$3.4 billion per year over the next five years. Not only has Congress only appropriated a tenth of that for fiscal year 2010, but both Congress and the Administration have been

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<sup>80</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 14.

<sup>81</sup> *Ibid.*, 17.

<sup>82</sup> U.S. Department of Health and Human Services, *Project Bioshield Annual Report to Congress: August 2007 through December 2008*, 1, <https://www.medicalcountermeasures.gov/BARDA/documents/bioshieldannualreport2008.pdf> (accessed June 4, 2010).

caught attempting to raid the BioShield Strategic Reserve Fund for non-national security programs.<sup>83</sup>

To meet the increased demand for these countermeasures additional biodefense labs must be built. The number of Biosafety Level 4 (BSL-4 labs: labs that contain and research the world's most dangerous pathogens, thus employ tight security and meticulous safeguards against exposure or accidents) has grown from five before 2001 to an estimated fifteen by 2012.<sup>84</sup> One example is the DIIS's National Biodefense Analysis and Countermeasures Center at Ft. Detrick in Maryland, which was built at the cost of \$150 million to be the lead research facility for national biodefense.<sup>85</sup> The number of BSL-3 labs (labs that handle dangerous pathogens that are not as deadly as BSL-4 pathogens, since they can often be treated or vaccinated against.) is unknown but it has grown tremendously since 9/11. The Government Accountability Office (GAO) estimates that at least 15,000 scientists and technicians now work in BSL-3 and BSL-4 labs.<sup>86</sup>

Inside all of these labs, biodefense research programs must be funded. Between 2001 and 2008, the National Institutes of Health (NIH) raised their biological weapon research budget from \$52 million to \$1.6 billion. Over the same period of time, the

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<sup>83</sup> U.S. Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, *Prevention of WMD Proliferation and Terrorism Report Card*, 6, <http://www.preventwmd.gov/static/docs/report-card.pdf> (accessed June 4, 2010).

<sup>84</sup> *World at Risk*, 25.

<sup>85</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 14.

<sup>86</sup> *Ibid.*, 16.

Department of Defense (DOD) doubled its biodefense research funding to \$1 billion. Such research included genomic research into the most dangerous pathogens.<sup>87</sup>

**The Amerithrax Case** Another significant cost to the U.S. government was the FBI/Postal Inspection Service investigation into the attack, called the Amerithrax case. Three noteworthy cost components of the investigation that can be derived include the investigators' salaries, Steven Hatfill's settlement amount, and developing the new forensic technology.

A simple estimate can be conducted to discover the cost of paying the investigators' salaries over the eight years of the FBI's Amerithrax investigation, once several figures are provided. The FBI's Amerithrax squad usually consisted of between 24 and 30 special agents.<sup>88</sup> In the FBI, the non-supervisory agent holds a Government Scale (GS) pay position between a GS-10 and GS-13. In addition to their base pay, special agents earn a 25% Law Enforcement Availability Pay (LEAP) bonus. The Washington, D.C. cost of living allowance increases each year. Therefore, the salaries have increased each year over the span of the eight year investigation (for calculation purposes only the span between 2002 and 2009 is included since the investigation started so late in 2001 and was winding down in 2009). These pay figures can all be found on the U.S. Office of Personnel Management "Salary Table" websites. By taking the average amount that each agent earned each year over the span of the eight-year investigation and setting the average number of agents at 27, the investigator salary cost of the investigation is estimated at \$16,706,250. According to the Bureau of Labor

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<sup>87</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 13.

<sup>88</sup> Darin Steele, interview by author, Washington, D.C., April 22, 2010.



Statistics, benefits add approximately 30.4% to the average U.S. employee's salary.<sup>89</sup>

The 30.4% benefit calculation boosts the salary cost to \$21,784,950.

The next cost represents one of the biggest black eyes in FBI history. Steven Hatfill was a bioweapons scientist who studied medicine in Rhodesia and South Africa and worked at several places, including Oxford University, the National Institutes of Health (NIH), and the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID).<sup>90</sup> Soon after the Amerithrax investigation began, Hatfill became a person of interest to the case. As a result, Hatfill was heavily scrutinized by the media, lost his job with defense contractor, SAIC, and could not find additional employment.<sup>91</sup> After several years, however, the FBI could find no evidence to prove that he was responsible for the anthrax attack. In 2003, Hatfill sued the Department of Justice.<sup>92</sup> In 2008, the Department of Justice paid Hatfill \$5.85 million to drop the lawsuit.<sup>93</sup>

The Amerithrax case was a new type of criminal investigation. No investigation had ever attempted to trace a biological agent back to its source. Due to the new nature of the case, the investigation had to follow a learning curve. The FBI had to enlist the help of the best genome researchers in the United States. These scientists created new technologies and groundbreaking techniques to help identify exactly where the anthrax came from. It is estimated that the development of this technology cost the FBI

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<sup>89</sup> U.S. Department of Labor, Bureau of Labor Statistics, "Employer Costs for Employee Compensation," <http://www.bls.gov/news.release/cecc.nr0.htm> (accessed on June 14, 2010).

<sup>90</sup> Cole, *Anthrax Letters, 192-195*.

<sup>91</sup> Ibid.

<sup>92</sup> Carrie Johnson, "U.S. Settles With Scientist Named in Anthrax Cases," *Washington Post*, June 28, 2008, <http://www.washingtonpost.com/wp-dyn/content/story/2008/06/27/ST2008062702767.html> (accessed June 7, 2010).

<sup>93</sup> Ibid.

approximately \$10 million.<sup>94</sup> In addition, the FBI is paying for an independent review of the scientific techniques that were used in the investigation. The National Academies will be responsible for vetting the methods used to trace the anthrax back to a flask that was under the supervision of USAMRIID scientist Dr. Bruce Ivins. This study will cost the FBI \$879,550.<sup>95</sup>

The above-mentioned figures of the Amerithrax case add up to \$38,514,500. Several figures, however, were not included in this estimate because they are difficult to ascertain. Such figures include:

- the salary costs of the support personnel involved with the case;
- the amounts paid for the work of investigators who were peripherally involved in the case and whose time was not fully dedicated to the investigation;
- overtime costs;
- and travel and lodging expenses for searches and interviews across the world.

The addition of these and other figures could possibly double the cost of what is already the most expensive case in the history of the FBI.<sup>96</sup>

**Nothing to Show for the Money** In spite of all of the money spent, the United States is no safer from a biological attack than it was before the 2001 anthrax attacks. Many of the resources have been used to prevent the same attack from happening. A

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<sup>94</sup> Catherine Herridge, "'Anthrax Killer' Suspect Had Sorority Obsession," Foxnews.com, <http://www.foxnews.com/story/0,2933,396823,00.html> (accessed June 7, 2010).

<sup>95</sup> Yudhijit Bhattacharjee, "FBI Anthrax Investigation under Scientific Review," *ScienceInsider*, May 6, 2009, <http://news.sciencemag.org/scienceinsider/2009/05/fbi-anthrax-inv.html> (accessed June 7, 2010).

<sup>96</sup> Herridge, "'Anthrax Killer' Suspect".

drug cartel could launch a much deadlier attack with relative ease. It would not be difficult to exploit the existing vulnerabilities.

The Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism states that, in spite of the money that has been spent, the United States has no deterrence against a biological attack because none of the key links are in place to mitigate the effects of a biological weapon. In fact, the Commission gave the government the grade of an F for its preparedness for a biological attack.<sup>97</sup>

The cost to launch the 2001 attack is hard to estimate since investigators believe that the materials, equipment, and expertise to develop the anthrax were already in place. It has been estimated, however, that acquiring the equipment and material needed for a laboratory to develop a biological weapon for a large scale attack would cost between \$200,000 and \$2 million.<sup>98</sup> The U.S. government spent \$50 billion to defend against a \$2 million attack. Even if this attack estimate is off by a factor of ten, then the cost to conduct the attack is still enormously cheaper than the cost to contain the infection, repair the damages, and prevent the next attack.

Another factor that must be elucidated is that all of this money was spent to resolve an attack with anthrax, which is a non-transmissible disease. How much would be spent if the attack used agents like plague, tularemia, or Q fever, that can be spread from person to person. The cost of patient treatment, quarantine efforts, and lost wages would have risen tremendously.

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<sup>97</sup> *WMD Report Card*, 6.

<sup>98</sup> Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *First Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction: I. Assessing the Threat*, 23, <http://www.rand.org/nsrd/terrpanel/terror.pdf> (accessed on June 4, 2010).

The United States could not continue to spend so extravagantly to defend against multiple biological attacks. Government response to another similar attack, much less a more destructive attack, would have deleterious effects on the U.S. government's finances and the nation's economy. If a drug cartel wanted to launch a biological attack to hurt the United States financially, then the 2001 anthrax attacks demonstrate that a bioattack would be very effective. Although some of the costs would not be repeated, such as money that was spent building up biodefense labs and other infrastructure, an attack of larger scale could cost the United States much more money in lost wages, victim treatment, hospital costs, increased biodefense efforts, and decontamination. At \$2 million per attack, a drug cartel could bankrupt the United States.

<b>COSTS</b>	<b>AMOUNT</b>
<b>Total Biodefense Cost since the 2001 Anthrax Attack</b>	\$50 billion
<ul style="list-style-type: none"> <li>• Total Anthrax Attack Economic Damage <ul style="list-style-type: none"> <li>○ Federal Bldg Decontamination <ul style="list-style-type: none"> <li>▪ EPA Cost to Decontaminate Capitol</li> </ul> </li> <li>○ Lost Postal Revenue 9/01-11/01</li> <li>○ Amerithrax Case</li> </ul> </li> </ul>	\$6 billion \$300 million \$27 million \$876 million \$38,514,500
• Postal Biohazard Detection Systems	\$375 million
• DHS BioWatch 2003-2008	\$400 million
• Smallpox Vaccine Expansion	\$1 billion
• BioShield 2003 Appropriation	\$5.6 billion
• Nat'l Biodefense Analysis and Countermeasures Center	\$150 million
• 2008 NIH Bioweapon Research Budget	\$1.6 billion
• 2008 DOD Bioweapon Research Budget	\$1 billion
<b>Cost Range of Future Bioattack</b>	\$200,000- \$2 million

**Table 1. Breakdown of Biodefense Cost Compared to Possible Cost of Future Bioattack**

Table 1 enumerates some of the costs associated with mitigating the effects of the 2001 anthrax attack and preventing a similar future attack from happening. The table uses the Commission to Prevent WMD Proliferation and Terrorism's overall biodefense cost figure of \$50 billion. The remaining costs are not exhaustive and do not represent all costs related to the anthrax recovery efforts or U.S. biodefense programs. This table also represents the disparity in spending between a non-state actor's attempt to launch bioattack against the United States and the U.S. government's efforts to defend against such an attack. Respectively, the disparity amounts to \$2 million versus \$50 billion.

A successful large-scale attack would be very effective in demoralizing the United States since so much money has been wasted in an attempt to prevent and mitigate another biological attack. Politicians and high-level bureaucrats would question previous actions to safeguard the United States, become paralyzed from taking steps in any direction, and the public would lose faith in their elected officials.

In spite of the U.S. government spending approximately \$50 billion to mitigate the damage caused by the 2001 anthrax attacks and defend Americans against a future attack, gaping vulnerabilities still exist. Compared to the money spent, the United States has little to show for it. The number of biodefense labs has greatly increased and the funding for biodefense research programs has skyrocketed, but no medical treatments or vaccines against numerous biological agents have been produced. Medications and vaccines are the primary defense against pathogens. If no vaccines have been created and mass-produced, then no progress in biodefense has been made. In some instances the United States is now more vulnerable than it was before 2001.<sup>99</sup> For example, the Commission on the Prevention of Weapons of Mass Destruction Proliferation and

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<sup>99</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 13.

Terrorism states that financial and intellectual barriers to developing a biowapon are lowering quickly.<sup>100</sup> A moderately well-funded and capable group with intent, such as a narco-terrorist organization, could easily exploit these factors and cause the United States agony on a national scale.

## CONCLUSION

The anthrax attacks had a mixed impact on the United States in terms of the measured effects of fatalities and casualties, fear, and government costs and economic damage. Although the deaths and casualties from this attack are tragic, statistically the death toll had absolutely no impact. Very few people were killed or injured and no public figures or national leaders were physically affected. If the goal of this attack was to amass a large bodycount then it failed. Narco-terrorists would probably use a transmissible and more infectious pathogen and a different delivery system to infect and kill a large number of people.

A small to moderate amount of fear was caused by this attack. National-scale panic and paralysis was not achieved. In spite of this, a disproportionately large amount of fear was caused compared to the number of fatalities and casualties. The level of fear was also high relative to the odds of someone becoming infected. Narco-terrorists could conduct this attack on a larger scale if they desired to cause more fear but were not concerned about inflicting a large death toll.

The economic damage from the anthrax attacks was devastating by any standard. Anthrax is the perfect pathogen to contaminate a large area. If a narco-terrorist group

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<sup>100</sup> *WMD Report Card*, 1.

wanted to contaminate a large city, deny access to its residents, and halt all government and economic functions, then it would follow the 2001 anthrax attacks closely.

## **CHAPTER 3**

### **Now the Sicarios are in Control**

#### **HISTORY**

The United States is the world's largest consumer of cocaine and several other illegal drugs.<sup>101</sup> Thus, operations and routes shipping those drugs to the United States are very profitable. The majority of the cocaine consumed in the United States is grown in Colombia. In the past Colombian drug cartels shipped drugs into the United States via boats and planes across the Caribbean, land routes through Mexico, and several other smaller means. In the 1980's, the local gangs who controlled the Mexican land routes used their leverage to gain wealth and business partnerships from the Colombians. With the influx of billions of dollars from Colombian cocaine, the gangs in the Mexican province, Sinaloa, began fighting each other over control of the lucrative routes. The Sinaloan gangs were then forced to combat criminal organizations from other parts of Mexico that were encroaching on their territory.<sup>102</sup>

The U.S.-backed counterdrug efforts of the past thirty years weakened the power and capabilities of the Colombian drug organizations and reduced the profitability of the

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<sup>101</sup> Central Intelligence Agency, "The World Fact Book, Field Listing: Illicit Drugs," <https://www.cia.gov/library/publications/the-world-factbook/fields/2086.html> (accessed on June 16, 2010).

<sup>102</sup> John Dinges, "Opinion: Mexico's Staggering Drug Wars," *Globalpost*, March 3, 2009, <http://www.globalpost.com/dispatch/worldview/090303/opinion-mexicos-staggering-drug-wars> (accessed June 5, 2010).



air and sea routes into Florida. These counterdrug efforts coupled with border-disintegrating effects of the North America Free Trade Agreement (NAFTA) made the land route through Mexico a more feasible way to ship drugs into the United States. As a result, 90% of the cocaine in the United States now comes through Mexico, making the shipping routes and the territory around them more valuable.<sup>103</sup>

### **RATIONAL ACTING CORPORATIONS**

In spite of the bloody way that they conduct business, rational people run these cartels. Most believe that cartel bosses and their employees are mindless psychopaths that are committing senseless acts of violence. This impression is the result of confusing rationality with morality. The cartel leaders and members are not moral men, they are criminals. The cartels are criminal corporations. The purpose of these corporations is to acquire wealth. The actions committed by members of these corporations is to put these corporations in a position to acquire wealth and at least keep it in that position if not improve its position. Since cartel members achieve their objectives by coming up with calculated solutions to strategic problems, they are rational people as defined by the rational actor model. According to the rational actor model, a rational actor makes decisions based on “behavior motivated by a conscious calculation of advantages, a calculation that in turn is based on an explicit and internally consistent value system.”<sup>104</sup>

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<sup>103</sup> Steve Fainaru and William Bonh, “As Mexico Battles Cartels, The Army Becomes the Law,” *Washington Post*, April 2, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/04/01/AR2009040104335.html?nav=emailpage> (accessed June 5, 2010).

<sup>104</sup> Graham T. Allison and Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis*, 2nd ed. (New York: Longman, 1999), 15.

The rational actor model not only mandates that there must be a purpose behind one's choice, but that consistency is displayed between actions done by the same actor.<sup>105</sup> This rational consistency explains why the cartels are responsible for so many deaths.

There are four core concepts of rational action. The first concept is that a rational actor ranks his potential actions according to his interests and objectives. The next concept is that the actor must choose from a series of alternatives during a certain situation. The third concept states that each of these alternatives has specific consequences. Finally, the rational choice results from choosing the alternative whose consequences rank highest compared to the actor's set of interests and objectives.<sup>106</sup>

The four concepts can be expressed in terms of the cartel leader. A cartel head is a criminal CEO. His responsibility is to increase the cartel's profit by increasing revenue and decreasing cost. The boss is faced with many different ways of doing this. However, each of these ways have negative consequences. Doing nothing could be either beneficial or detrimental, depending on the situation. In some manner, the cartel head considers his responsibilities, remembers his goals and objectives, and reviews the actions that he has available to him. While reviewing the actions, he compares the effectiveness of each in terms of accomplishing his goals to the negative consequences that offset the benefit. In the end, the cartel head picks the action where the most benefit remains from what has been subtracted by the negative consequences.

On a certain level, this calculation occurs every time a cartel head decides to display the headless corpses of five of his rivals in a playground or kills the brother of a rival cartel head in retaliation for the murder of his own brother. These acts, while

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<sup>105</sup> Allison and Zelikow, *Essence of Decision*, 17.

<sup>106</sup> Ibid., 18.

psychopathic, are motivated by a calculation that a show of force is necessary to keep potential challengers in their place.

In addition to rationality, strategic actions by drug cartels are influenced by other forces indicative of the organizational process model and the bureaucratic politics model.<sup>107</sup> Like bureaucracies and other large organizations, the head of a cartel usually has to act within the standard operating procedures of his cartel.<sup>108</sup> The cartel leader has a wide range of discretion, but he must contend with the cartel as an institution that has its own pattern of predictable behavior. Additionally, the direction that a cartel has taken may be the result of a struggle between the leader's lieutenants. This is similar to policies that are created from the pushing and pulling that takes place between government agencies.<sup>109</sup> If the struggle is too explosive, then the cartel could divide into warring factions. In the end, a cartel leader wields an amazing amount of power over an organization that, paradoxically, acts on its own. Besides the results of leader directives, cartel actions can also be the consequences of the machinations inside of the cartel or an action that is done in accordance with the standard operating procedure of the cartel.

In addition to the constraints of other models, the rational actor model states that the rationality of the actor "refers to consistent, value-maximizing choice within specified constraints."<sup>110</sup> One of the real world constraints that members of the cartels have to contend with is that their business is illegal. There are no unions to protect workers' rights, no lawyers to settle financial disputes, and no government regulation that

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<sup>107</sup> Marc A. Genest, *Conflict and Cooperation: Evolving Theories of International Relations*, 2<sup>nd</sup> ed. (Belmont, CA: Wadsworth/Thomson, 2004), 447.

<sup>108</sup> *Ibid.*, 445.

<sup>109</sup> *Ibid.*, 447.

<sup>110</sup> Allison and Zelikow, *Essence of Decision*, 18.

corporations must abide by. Additionally, certain types of people with certain psychological profiles are drawn to this business. Certain types of actions are most effective against these types of people. Almost always these actions must display force and power, even when acting defensively. As a result, the actors in this arena are constrained to violent action. The only alternatives are to modulate the level of violence. That level of violence generally trends higher to keep acts from becoming forgettable.

When one models drug cartels after legitimate corporations, then alternatives to violence that increase profit can be imagined. For instance, a corporation can form strategic alliances and make its product more efficiently. A corporation can also cut deals with businesses upstream and downstream in the manufacturing and distribution processes.

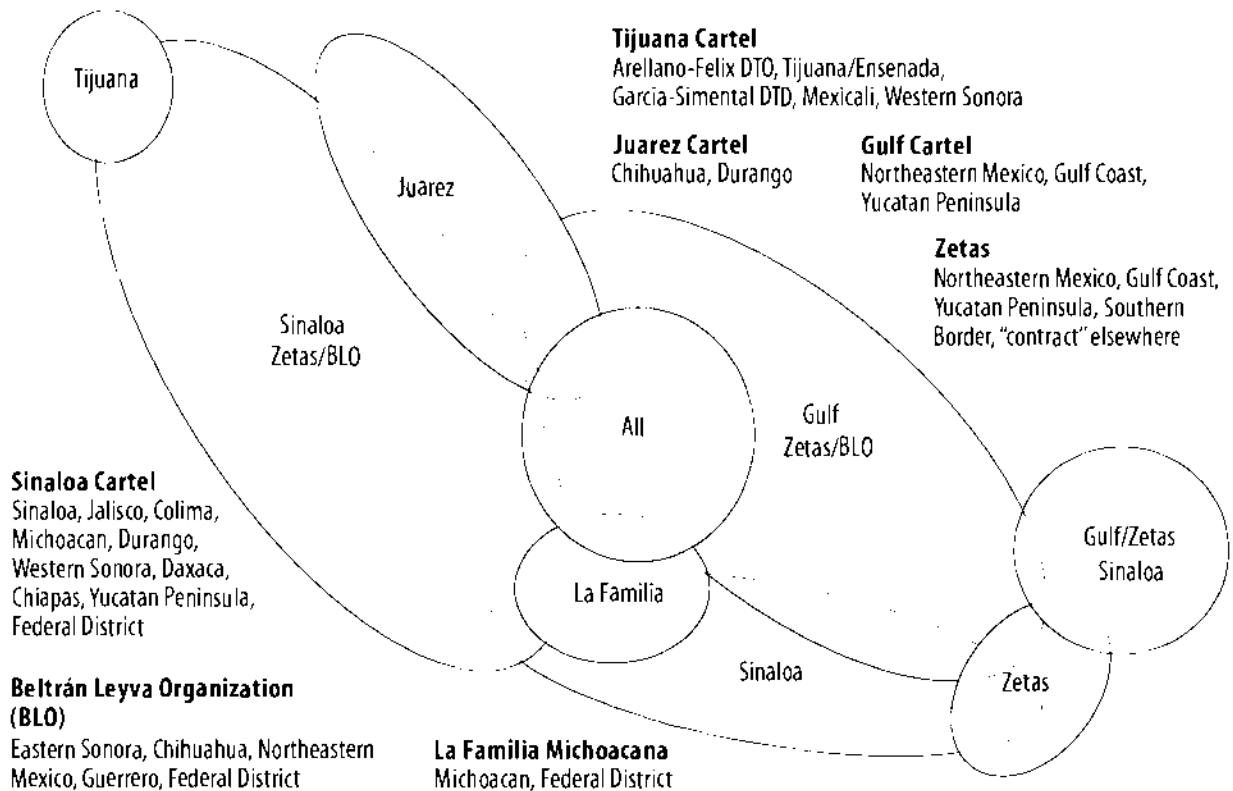
The problem in the drug smuggling business, however, is that it all depends on the routes. Whoever controls the routes makes the money. There are only a finite number of available routes since U.S. counterdrug efforts have reduced the effectiveness of large scale air and sea smuggling. Thus, the primary way to make money in the drug smuggling business is to acquire high traffic routes and territory close to the U.S. border and the primary way to expand revenue is to take routes from other drug smugglers.

Once someone has shed enough blood to acquire territory and defend it, then he could engage in fundamental business practices. He could try to get more money from the Colombian suppliers and pay less to the American distributors, streamline his business model, or change the purity of the drugs. These actions, however, are meaningless if one does not control any territory or has not taken the steps to protect the territory under his control.

In addition to all of the other constraints present in a criminal enterprise environment, the Mexican cartels are also constrained by the fact that they can only make enough money to sustain their massive organizational structures by overly depending upon the routes. In the legitimate world, businesses have constrained moral options and unconstrained operational options. While in the Mexican drug trafficking world, businesses have unconstrained moral options but constrained operational options. Therefore, leaders and members of the cartels engage in any level of violence in order to gain control of more territory with access to high traffic routes into the United States.

## **CARTEL PROFILES**

The Mexican Cartel landscape is constantly changing. Internal and external pressures cause cartels to break up and multiple cartels to ally into a loose federation or merge completely. Some cartels are weakened so thoroughly by the arrest or murder of their leaders that other cartels will acquire their men, territory, and operations. When a cartel's leader is killed or arrested, then the next person in line takes charge. Often that cartel's leader was killed by the next person in line so that he could take charge. When a new leader emerges, then the profile of that cartel could change completely.



**Figure 8. Mexican Drug Cartel Territories**

Source: U.S. Congressional Research Service, *Mexico's Drug-related Violence*, by June S. Beittel, 7, <http://www.fas.org/sgp/crs/row/R40582.pdf> (accessed June 5, 2010).

Figure 8 shows the distribution of the major cartels throughout Mexico. The distribution represents their base of operations and the smuggling routes that they control. Areas that include more than one cartel or contain overlapping circles indicate that it is disputed territory. Such areas may be fought over because lucrative routes into Mexico or the United States run through them. The fact that all of the circles overlap other circles demonstrates that a certain degree of drug violence is happening throughout Mexico.

## **Sinaloa Cartel**

Presently, the Sinaloa Cartel is the largest of the Mexican cartels and has been called the most powerful drug trafficking organization in the world. The Sinaloa cartel is led by Joaquin Guzman, the most famous of all the cartel leaders. Joaquin Guzman, also known as El Chapo, appeared on Forbes list of richest people in the world. After a two year battle with the Juarez Cartel over lucrative trading routes, it is now believed that the Sinaloa cartel took the territory surrounding Ciudad Juarez from the Juarez cartel.<sup>111</sup>

## **Beltran Leyva Organization**

The Beltran Leyva Organization was allied with the Sinaloa Cartel, until Alfredo Beltran Leyva was arrested in January 2008. The Beltran Leyva Organization believed that Joaquin Guzman provided information that led the Mexican army to Alfredo. In retaliation, it is believed that the Beltran Leyva Organization killed Guzman's son. The Beltran Leyva Organization has an excellent intelligence apparatus that has infiltrated the highest levels of Mexican government and possibly U.S. diplomatic establishments.<sup>112</sup> The Beltran Leyva Organization's position of power and status has risen over the past year due to strategic moves, including allying with another drug trafficking organization, Los Zetas, assassinating important members of the Mexican government, gaining U.S. territory, including a lucrative distribution hub in Chicago, and leveraging its highly

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<sup>111</sup> Alicia A. Caldwell and Mark Stevenson, "Sinaloa takes over Ciudad Juarez," *Huffington Post*, April 9, 2010, [http://www.huffingtonpost.com/2010/04/09/sinaloa-takes-over-ciudad-juarez\\_n\\_531378.html](http://www.huffingtonpost.com/2010/04/09/sinaloa-takes-over-ciudad-juarez_n_531378.html) (accessed June 6, 2010).

<sup>112</sup> Sylvia Longmire, "DTO 101: The Beltran Leyva Organization," Mexico's Drug War, [http://borderviolenceanalysis.typepad.com/mexicos\\_drug\\_war/dto-101-the-beltran-leyva-organization.html](http://borderviolenceanalysis.typepad.com/mexicos_drug_war/dto-101-the-beltran-leyva-organization.html) (accessed June 6, 2010).

placed sources. On December 16, 2009, however, the group's leader, Arturo Beltran Leyva was killed during a battle with Mexican sailors.<sup>113</sup>

### **Gulf Cartel and Los Zetas**

As previously mentioned, the Beltran Leyva Organization is currently allied with Los Zetas against the Sinaloa Cartel. Los Zetas started as a Gulf cartel enforcer group comprised of ex-soldiers trained by U.S. Special Forces to fight against the Mexican cartels. When Gulf cartel head Osiel Cardenas Guillen was extradited to the United States, the Gulf cartel became more of a horizontal network organization led by three of Cardenas Guillen's top lieutenants. Heriberto Lazcano, head of Los Zetas, was one of those lieutenants.<sup>114</sup> Since then, Los Zetas have split from the Gulf cartel, allied with the Beltran Leyva Organization, only to split with it to become an independent cartel, and have now possibly realigned itself with the Gulf Cartel. Los Zetas rely on precision military tactics, extreme violence, and public acts of terror to intimidate rival cartels and to keep the local population in line. In addition to trafficking, Los Zetas have branched out into dealer protection, extortion, and kidnapping.

### **Juarez Cartel**

The current incarnation of the Juarez cartel is the result of the death of Amado Carillo Fuentes, the leader of the cartel during the 1990's. His death caused a power

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<sup>113</sup> "Top Mexican Drug Lord Killed in Fight with Law Enforcement," *Foxnews.com*, December 17, 2009, <http://www.foxnews.com/world/2009/12/17/mexican-drug-lord-killed-fight-law-enforcement/> (accessed June 6, 2010).

<sup>114</sup> Sylvia Longmire, "DTO 101: The Gulf Cartel," *Mexico's Drug War*, [http://borderviolenceanalysis.typepad.com/mexicos\\_drug\\_war/dto-101-the-gulf-cartel.html](http://borderviolenceanalysis.typepad.com/mexicos_drug_war/dto-101-the-gulf-cartel.html) (accessed June 6, 2010).



vacuum that people within and outside of the organization fought to fill. The Tijuana cartel, which was very strong at the time, acquired much of the Juarez cartel's territory and operations. Once Joaquin Guzman escaped from prison in 2001, many Juarez cartel members joined the Sinaloa cartel, further weakening the Juarez cartel. These defections were a source of peace and war between the two cartels. In 2004, however, current Juarez cartel leader Vicente Carrillo Fuentes killed Guzman's brother due to the belief that Guzman was responsible for the death of Vicente's brother. The two cartels have been battling ever since, with the exception of a truce between 2005 and 2006 that allowed the Sinaloa cartel to start a war against the Gulf cartel.<sup>115</sup> The Sinaloa cartel has possibly defeated the Juarez cartel and recently taken its territory surrounding Ciudad Juarez.

### **Tijuana Cartel**

The Sinaloa cartel is also fighting the Tijuana cartel for control of routes through Baja and into California. Teodoro Garcia Simental, a high-ranking member of the Tijuana cartel recently broke off and formed his own cartel. With the backing of the Sinaloa cartel, Garcia Simental has been fighting a brutal war against the Tijuana cartel. Garcia Simental and several of his lieutenants, however, were arrested in early 2010.

### **La Familia**

La Familia is another example of an emerging cartel. La Familia is very entrepreneurial and represents itself as a semi-legitimate corporation that only hires residents from its home province of Michoacan. La Familia has a horizontal business

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<sup>115</sup> Sylvia Longmire, "DTO 101: Juarez Cartel," Mexico's Drug War, [http://borderviolenceanalysis.typepad.com/mexicos\\_drug\\_war/dto-101-the-juarez-cartel.html](http://borderviolenceanalysis.typepad.com/mexicos_drug_war/dto-101-the-juarez-cartel.html) (accessed June 6, 2010).

structure with offices across Mexico. La Familia also has social and even political motivations. La Familia possibly originated as a group to stop the crime in the Mexican province of Michoacan. It provided help to poor communities that the government could not provide. La Familia posted public service announcements in newspapers promising to build schools. Reports indicate that La Familia has a grassroots following sparked by principles and practices of taking care of its native people and lands.<sup>116</sup> La Familia has a strong hold on Michoacan politics and supports a political agenda that exceeds meeting the financial needs of its operations. La Familia is led by a New Age zealot, Nazario Moreno Gonzales, who is called El Mas Loco. As a result, La Familia's doctrine is very religious to the point of being extremist and Gonzales holds its members to strict religious standards.<sup>117</sup>

## **OPERATIONAL ENVIRONMENT**

The leaders of the Mexican drug trafficking organizations have always had to worry about other organizations and even people in their own organizations, but the Mexican government was never an obstacle. In fact, all levels of government in Mexico were so corrupt that the cartels could count on officials to at least remain oblivious, if not complicit, in their operations. These conditions changed with the election of President Calderon. In 2006, Felipe Calderon became the president of Mexico and soon after

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<sup>116</sup> George W. Grayson, "La Familia: Another Deadly Mexican Syndicate," Foreign Policy Research Institute, <http://www.fpri.org/cnnotes/200901.grayson.lafamilia.html> (accessed June 6, 2010).

<sup>117</sup> Steve Fainaru and William Booth, "A Mexican Cartel's Swift and Grisly Climb," *Washington Post*, June 13, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/06/12/AR2009061203829.html?nav=emailpage&sid=ST2009061204134> (accessed June 6, 2010).

started a major offensive against drug trafficking and drug-based public corruption. President Calderon's policies, including mobilizing 50,000 soldiers and 20,000 federal police officers within Mexico, have disrupted the cartel's business and operational practices.<sup>118</sup> As a result, the cartels' profiles, structures, and practices have become more dynamic and the landscape's rate of change is accelerating. In reaction to the increased pressure, the cartels have attacked each other and government forces with increasing violence. According to the Associated Press 22,700 people have been killed since the beginning of President Calderon's drug offensive.<sup>119</sup> According to the Mexican newspaper *El Universal*, 19,821 were killed in narco-violence between 2005 and 2009.<sup>120</sup>

Year	Deaths
2005	1,573
2006	2,221
2007	2,673
2008	5,630
2009	7,724
TOTAL	19,821

**Table 2. Death Toll of the Mexican Drug War by Year According to *El Universal***  
**Source:** *El Universal*, "Narcoguerra 2009: Todos Peredieron."

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<sup>118</sup> Open Source Center, "Mexico: Four Severed Heads Found Near Monument in Michoacan State," [https://www.opensource.gov/portal/server.pt/gateway/PTARGS\\_0\\_0\\_200\\_203\\_121123\\_43/content/Display/LAP20100331068009?searchKey=833517&rpp=10&index=3](https://www.opensource.gov/portal/server.pt/gateway/PTARGS_0_0_200_203_121123_43/content/Display/LAP20100331068009?searchKey=833517&rpp=10&index=3) (accessed through opensource.gov on June 6, 2010).

<sup>119</sup> Ken Ellingwood, "Mexico Death Toll in Drug War Higher than Previously Reported," *Los Angeles Times*, April 14, 2010, <http://articles.latimes.com/2010/apr/14/world/la-fg-mexico-toll14-2010apr14> (accessed on June 6, 2010).

<sup>120</sup> *El Universal*, "Narcoguerra 2009: Todos Peredieron," <http://www.texasobserver.org/uploads/files/narcoguerra.pdf> (accessed on June 15, 2010).

Table 2 shows that violence related to the drug war has escalated each year. In 2008 and 2009 the deaths increased dramatically. This occurred despite President Calderon's focus on hindering cartel activities starting in 2006, which included mobilizing the Mexican military to fight the cartels, restructuring the police forces throughout the country, and attempting to stamp out government corruption.

Since most of this violence is occurring close to the U.S. border, the United States is concerned about the violence spilling over into the border states. The United States is very supportive of President Calderon's anti-drug stance and has been funding his efforts and sending experts and equipment. In 2007, the United States and Mexico signed the Merida Initiative, in which the United States pledged to send \$1.5 billion in training, equipment, and vehicles to Mexico and Central American countries for the purpose of combating drug trafficking organizations. Mexico will receive over \$1 billion of this money.<sup>121</sup> The U.S. government will continue to support the Mexican government in fighting the Mexican cartels and preventing the drug violence from entering the United States. If the drug war worsens or indications arise that the violence will bleed over into the United States, then the U.S. government will become more involved. If the stability of the Mexican government is threatened and Mexico risks becoming a failed state, then a report by the U.S. Joint Forces Command stated that U.S. military involvement inside of Mexico will be required to protect U.S. national security.<sup>122</sup>

The bottom line is that the cartels are facing more threats from all sides. Increasing violence and pressure will destabilize the situation. Pre-existing constraints on violence will disappear. This may force desperate and drastic measures to be taken by

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<sup>121</sup> U.S. Department of State, "The Merida Initiative."

<sup>122</sup> Dinges, "Opinion: Mexico's Staggering Drug Wars."

the cartels to protect their assets, their organization, their power status, or the lives of the leaders.

### **IS A BIOWEAPON AN OPTION?**

With the situation in Mexico devolving and pressure on the cartels building, the cartels could look for options that would redirect some of that pressure and strengthen their positions. This option would undoubtedly involve a massive amount of violence. The cartels have already deployed squads of fighters against each other and the Mexican military. The cartels are relatively evenly matched, so battling each other has taken a large manpower toll without much gain. Frontal attacks against military positions have been even costlier and netted almost no gain.<sup>123</sup>

To change the nature of the conflict and improve its standing, a cartel may broaden its targets. Besides the Mexican military and other cartels, Mexican civilians and the United States are involved in this conflict. Targeting them could give a cartel the advantage that it desires.

A cartel may also resort to more drastic and sophisticated measures against this broader array of targets. A cartel could decide to send hit squads to indiscriminately kill Mexican or American civilians. A cartel could also decide to plant explosives that target military or civilian populations. Both of these options could involve campaigns that could kill hundreds of people.

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<sup>123</sup> CBSnews.com, "Mexico Drug Gangs Attack Army Garrisons," <http://www.cbsnews.com/stories/2010/04/01/world/main6352799.shtml> (accessed on June 6, 2010).

A cartel could also choose to cause more damage by deploying a weapon of mass destruction (WMD). A WMD would not only kill hundreds or thousands of people, but could cause substantial physical damage and would send a message that would resonate more strongly with the governments. Even if the death toll from a WMD was not much higher than from a conventional explosive, a WMD conveys a point that a conventional explosive does not: that the attacker is extremely sophisticated and has no apprehensions about mass murder. This point will cause a government to hesitate, wonder what else the attacker is capable of, and consider very carefully, and even tentatively, how to respond.

Of all types of WMD, a biological weapon would be the most suitable. A pathogenic agent is easily acquired from nature or an unsecure biological lab. To build a nuclear weapon, a cartel would need to acquire highly enriched uranium. Such a material, or even lower grade plutonium, is extremely rare and heavily protected.<sup>124</sup> If a cartel wanted to build a radiological dispersal device, also known as a dirty bomb, then the radiological material is still difficult to acquire, and the effort required to do so would outweigh the effect of the radiation on the victims. Additionally, it would be much cheaper to acquire the components and build a biological weapon than it would be for a nuclear weapon. Furthermore, a cartel would have an easier time remaining undetected while it acquired bioweapon components, built the bioweapon, and transported it compared to doing the same for a nuclear weapon.

Conversely, a chemical weapon would be the easiest and cheapest of all WMD to build. The problem, however, is that chemical weapons can be the clumsiest to use in the

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<sup>124</sup> Mickey McCarter, "Larsen Calls for Boosts in Bioterror Response," *HS Today*, May 5, 2010, <http://www.hstoday.us/content/view/13148/149/> (accessed on June 6, 2010).

field. A chemical weapon can be hard to control and its effects are not very persistent. Such effects could limit the body count.

A biological weapon can have a cost closer to that of a chemical weapon but the lethality of a nuclear weapon. In addition, a biological weapon is easier to control and the desired effects can be customized to fit the objective. While the only way to modify the damage of a nuclear weapon is by making it bigger or smaller or detonating it at different altitudes, every factor of a biological weapon can be altered, including its delivery method, lethality, target precision, and desired effects. A biological weapon also gives a cartel the greatest chance to remain anonymous if it chooses. A pathogen that is cultivated from some isolated cow pasture is less traceable than a captured fighter or a registered chemical or sampled fissile material.

A biological weapon is the ideal weapon for a cartel that wants to cause mass casualties and cause a government to pause and review its policies. It is cheap and lethal. Relative to the other options, a biological weapon can be selected to produce a specific known effect to accomplish a particular objective.

### **ARE THE CARTELS A BIOWEAPON THREAT?**

Just because a biological weapon is an ideal choice for a specific type of organization, does not necessarily mean the organization would use one. It takes a unique group to be a threat to launch a biological attack. Such a group would need to have the sophistication, ruthlessness, and motivations for conducting a bioattack. Any

one of the Mexican cartels possesses these three requirements, thereby making them all a threat to use a bioweapon against any of their targets.

### **Sophistication**

**Financial Capabilities** When discussing the capabilities needed to conduct a biological attack, three areas are involved: the ability to fund the attack, the ability to cultivate the biological agent and build an effective dispersal device, and the ability to transport the device or dispersal equipment. As stated before, it would cost between \$200,000 and \$2 million to build a facility capable of developing an agent to be used in a large scale attack.<sup>125</sup> As far as having the expertise needed to develop a bioweapon, a studious biology major would suffice.<sup>126</sup> A cartel that did not want to take any chances or possibly wanted a more exotic agent could then employ a Russian scientist who has previously worked in the Soviet bioweapons program. In 2004, a Russian WMD scientist was making approximately \$300 a month.<sup>127</sup> A bioweapon scientist who has a better understanding of his worth may ask for several million dollars. According to these figures, the approximate maximum cost to develop a biological weapon would be \$15 million. Mexican officials estimate that the cartel's average annual operating budget is

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<sup>125</sup> Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *First Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction: I. Assessing the Threat*, 23, <http://www.rand.org/nsrd/terrpanel/terror.pdf> (accessed on June 4, 2010).

<sup>126</sup> Richard Rupert, phone interview by author, April 21, 2010.

<sup>127</sup> John V. Parachini, David E. Mosher, John Baker, Keith Crane, Michael Chase, and Michael Daugherty, *Diversion of Nuclear, Biological, and Chemical Weapons Expertise from the Former Soviet Union: Understanding an Evolving Problem* (Santa Monica, CA: RAND, 2005), 11, [http://www.rand.org/pubs/documented\\_briefings/2005/RAND\\_DB457.pdf](http://www.rand.org/pubs/documented_briefings/2005/RAND_DB457.pdf) (accessed on June 6, 2010).



\$10 billion, more than enough to cover the cost.<sup>128</sup> If Joaquin Guzman, the head of the Sinaloa cartel, wanted to personally pay for the operation, then he could; Forbes estimates that Guzman's worth is over \$1 billion.<sup>129</sup>

**Networking and Infiltration Capabilities** If the attack were to be launched within Mexico, then transportation of the bioweapon would be a non-issue. A cartel has the ability to range freely anywhere inside Mexico. A cartel has only a slightly less ability to roam inside the United States. According to the U.S. Border Patrol, 48 million pedestrians, 90 million private vehicles, and 4.4 million semi-trucks crossed into the United States from Mexico in 2004.<sup>130</sup> The cartels send thousands of tons of drugs in this traffic. The bioweapon's disassembled, innocuous-looking equipment and pathogenic material could be shipped across the border on cartel vehicles that have clean registrations, contain no illegal contents, and are driven by drivers with clean records. Another option is to transport the bioweapon under the border through one of the dozens of cartel tunnels.<sup>131</sup>

Mexican cartels are easily capable of launching a biological attack, to the point that it is almost not an issue for a cartel. In fact, their billions of dollars, international network, and proximity to the United States make them more capable than any terrorist group, criminal organization, or rogue state of attacking the United States with a

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<sup>128</sup> Fainaru and Booth, "As Mexico Battles Cartels."

<sup>129</sup> E. Eduardo Castillo, "Mexico Angered by Drug Lord's Spot on Forbes List," *USA Today*, November 13, 2009, [http://www.usatoday.com/money/media/2009-11-13-forbes-drug-lord\\_N.htm?csp=outbrain&obref=obnetwork](http://www.usatoday.com/money/media/2009-11-13-forbes-drug-lord_N.htm?csp=outbrain&obref=obnetwork) (accessed on June 6, 2010).

<sup>130</sup> Danna Harman, "Mexicans take over Drug Trade to US," *Christian Science Monitor*, August 16, 2005, <http://www.csmonitor.com/2005/0816/p01s03-woam.html> (accessed on June 6, 2010).

<sup>131</sup> U.S. Department of Justice National Drug Intelligence Center, "U.S. Southwest Border Smuggling and Violence," National Drug Threat Assessment 2010, under, "Traffickers' Use of Subterranean Tunnels Along the Southwest Border," <http://www.justice.gov/ndic/pubs38/38661/swb.htm#Top> (accessed on June 6, 2010).

biowapon. Moreover, the Mexican cartels are perfectly suited to conduct such an attack based on their vast resources, their infrastructure and connections within the United States, and their adeptness at transporting contraband across the border in spite of intense law enforcement scrutiny.

### **Ruthlessness**

For the purpose of this thesis, ruthlessness is the willingness to conduct an act that harms others while helping the actor. Ruthlessness increases when the act is more harmful to others but the benefit to the actor remains constant. In the case of the Mexican drug cartels, ruthlessness is measured by violence. The level of violence committed by the cartels can be used to answer the question of whether they are ruthless enough to use a biological weapon.

**Body Count Statistics** The key measure of violence is the death toll. According to the Associate Press, which gained access to a confidential Mexican government report, the number of people who have died in the three year war between the drug cartels is 22,700.<sup>132</sup> The vast majority of these deaths are cartel members, but innocent civilians, police, and soldiers are also included in this figure. As a sign of increasing ruthlessness, the death rates have increased each year. In 2009, 9,635 people were killed. From January through March of 2010, 3,365 people were killed, making a total of 13,460 for 2010 if the trend stays consistent.<sup>133</sup> Cartel members have killed while attempting to gain

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<sup>132</sup> Ellingwood, "Mexico Death Toll."

<sup>133</sup> Ibid.

territory, to punish others for betrayals, as retribution for other deaths, to intimidate the government and the public, and to replace uncorrupt officials with corrupt officials.<sup>134</sup>

**Torture, Mutilation, and Beheadings** Another sign of increasing ruthlessness is the increasingly gruesome methods of killing, torture, and mutilation. From 2007 to 2009, beheadings increased from twenty to 145.<sup>135</sup> Generally, the headless bodies are found in some public area, while the missing heads are found in another. For example, on March 31, 2010, four heads were found at the feet of a statue of former President Lazaro Cardenas in a park in Apatzingan, Michoacan.<sup>136</sup> The most infamous case of beheadings was committed by La Familia when, in September 2006, men burst into a night club in Uruapan, Michoacan, dropped five heads onto the dance floor, and left a message that read "La Familia doesn't kill for money. It kills only those who deserve to die." In addition, La Familia was responsible for erecting a cross beside a road from which five heads hung.<sup>137</sup> For fear of being outdone, La Familia leaves headless bodies in public areas and arranges for photographs of the scenes to be published in Michoacan tabloids.

La Familia's violence, however, has not been limited to severed heads. It has also killed its enemies by boiling them to death and gouging their skulls with ice picks.<sup>138</sup> La Familia is not unrivaled in its brutality. Los Zetas are considered one of the more brutal

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<sup>134</sup> U.S. Congressional Research Service, *Mexico's Drug-related Violence*, 11-12.

<sup>135</sup> Peter M. Leitner, "Global Terrorists' Profiles and CBRE Threats" (presentation at the Second International CBRE Operations Conference, Raffles City Convention Centre, Singapore, December 8-11, 2009).

<sup>136</sup> Open Source Center, "Mexico: Four Severed Heads."

<sup>137</sup> Fainaru and Booth, "Mexican Cartel's Swift and Grisly Climb," under "Competing to Kill."

<sup>138</sup> Ibid.

cartels. After a raid was conducted on one of their buildings a crusty table for torturing people was discovered.<sup>139</sup> More evidence of their affinity for torturing can be discerned from the report of several Zetas kidnapping the Grammy nominated singer, Sergio Gomez, torturing him, to include burning his testicles with a blowtorch, and leaving his mutilated body on the side of a road. This act was retribution for singing ballads about a rival cartel.<sup>140</sup>

**Violence against Civilians** In the past, cartels have been careful not to target or kill civilians for fear of losing the public's tacit approval of their existence. Unfortunately, cartels are breaking this rule with increasing regularity. Los Zetas are the biggest offenders of this rule, to the point that other cartels have combined forces against them to stop them from harassing and killing civilians.<sup>141</sup> For example, a group of Zetas walked into a Monterrey nightclub and robbed everyone inside for not buying their drugs. This trend is now being emulated by the other cartels.<sup>142</sup>

During the fight over Juarez between the Sinaloa and Juarez cartels, violence against civilians escalated to a new high. In one instance, cartel members threatened teachers that they would start killing students if the teachers did not forfeit their Christmas bonuses to the cartel.<sup>143</sup> Once the Sinaloa cartel gained control of Juarez, its

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<sup>139</sup> Ioan Grillo, "The Danger of Singing about Drugs," *Globalpost*, February 2, 2009, <http://www.globalpost.com/dispatch/mexico/090130/the-danger-singing-about-drugs> (accessed on June 6, 2010).

<sup>140</sup> Ibid.

<sup>141</sup> John Murray, "Ciudad Juarez: War Against Los Zetas, Along the Gulf and Into America," *The Awl*, <http://www.theawl.com/2010/04/ciudad-juarez-war-against-los-zetas-along-the-gulf-and-into-america> (accessed June 6, 2010).

<sup>142</sup> Pancho Montana, "Mexican Drug Cartels Raid Massive Rave Parties, Crack Down On Rival Pushers....," *The Exiled*, entry posted on February 28, 2010, <http://exiledonline.com/the-economy-is-bad-for-mexican-drug-cartels-too-zetas-start-shaking-down-kids-at-raves/> (accessed on June 7, 2010).

members began burning down houses, churches, and businesses in order to run town residents out to prevent them from interfering with operations.<sup>144</sup>

Reliance on heavy-handed tactics to intimidate the public could cause cartels to employ even more ruthless tactics over time. Increasingly brutal tactics could cause the public to turn against the cartels. This may then force cartels to act even more harshly against the public in order to quell any uprisings and gain their acquiescence.

**Summary** Increasing brutality against rival cartel members and initiating violence against civilians indicates that the cartels are becoming more ruthless. The thousands that are already dead combined with an increasing death rate and deteriorating regard for the living confirm that cartels are ruthless enough to use a bioweapon to solve their strategic problems and accomplish their financial objectives. The chief of anti-drug operations at Mexico's Public Security Ministry, Rafael Pequeño García, succinctly provided a rationale for the growing ruthlessness when he said, "When a cartel is divided into smaller pieces, the pieces become more violent. Because when you break up a big cartel, the people with access to command are the sicarios, the hit men. Now the killers are running the organizations. That is why they are so violent. They don't know anything about negotiation. Everything is about force and fear."<sup>145</sup>

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<sup>143</sup> Washington Post, "A Neighborhood on the Brink," Washington Post Web site, Flash video file, 2:27, <http://www.washingtonpost.com/wp-srv/world/interactives/mexico-at-war/video.html> (accessed on June 7, 2010).

<sup>144</sup> Mark Stevenson and Alicia A. Caldwell, "Mexican Cartels Empty Border Towns," *Denver Post Web site*, April 16, 2010, [http://www.denverpost.com/nationworld/ci\\_14898094](http://www.denverpost.com/nationworld/ci_14898094) (accessed on June 7, 2010).

<sup>145</sup> Fainaru and Booth, "Mexican Cartel's Swift and Grisly Climb," under "Competing to Kill."

## **Motivations**

Besides being capable and ruthless enough, a cartel would still need a reason to launch a biological attack. As rational actors, cartel leaders would first need a problem worthy of considering such a drastic action. Moreover, a cartel head would consent to this action based on increasing, or at least maintaining, the cartel's financial well-being. Finally, a biological attack would only be suitable if a boss would calculate in some sense that the advantages outweighed the negatives. With the state of affairs being what they are for the Mexican cartels, one does, or soon will, have enough motivation to use a biological weapon to try to improve his cartel's situation. Such motivations include making the environment more conducive to cartel operations, eliminating or discouraging a threat, negotiating terms from an unassailable position, or shifting the perception of the drug war.

**What Could a Cartel Gain?** Launching a biological attack, particularly one that targeted the Mexican government or the military forces, could be a good step towards reducing the counterdrug efforts and returning Mexico to its pre-2007 state, before the pressure on the cartels and the crackdown on drug-based corruption began. This would create an environment that is more favorable to conducting drug trade business due to less drug interdiction and law enforcement. This would also be a safer environment for the cartel heads. An attack by a cartel against the government would be designed to intimidate public officials rather than destroy the government structure. Government officials, including police and military, who fear for their safety are easier to control and can divert law enforcement efforts allowing a cartel to operate without interference.<sup>146</sup>

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<sup>146</sup> U.S. Congressional Research Service, *Mexico's Drug-related Violence*, 11.

This attack could also tip a teetering public into blaming President Calderon for all of the deaths. Victims and families of victims already blame President Calderon for all of the violence.<sup>147</sup> Many in Mexico blame President Calderon for instigating this war that has disrupted so many Mexican lives. Many also believe that involving the military needlessly escalated the war. Additionally, President Calderon has alienated many politicians at all levels of government while trying to eliminate corruption. A catastrophic event such as a bioattack could turn the Mexican population and government officials against President Calderon, leaving him powerless and forcing him to abandon his staunch counterdrug policies.

**Who Could a Cartel Attack?** Although the previous motivations in effect eliminate a threat, a cartel boss could desire to use a biological weapon directly against a threatening entity. Such threats include another cartel, the Mexican military and federal law enforcement, or any interfering U.S. entity.

When attacking another cartel several scenarios are possible. A weak cartel could attack a stronger cartel in a desperate act of self-preservation. A strong cartel could use a bioattack to wipe out the last stubborn hold-outs that stand between it and new territory. Finally, one cartel could decide to use a biological weapon to break a stalemate with another cartel of equal strength. A tabular representation of the motivations based on the involved cartels' relative strength is provided in Table 3 on the following page.

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<sup>147</sup> Washington Post, "The Agony of the Victims," Washington Post Web site, Flash video file, 2:20, <http://www.washingtonpost.com/wp-srv/world/interactives/mexico-at-war/video.html> (accessed on June 7, 2010).

<b>Attacking Cartel</b>	<b>Target Cartel</b>	<b>Motivation</b>
Weak	Strong	Self-preservation
Strong	Weak	Consolidate power
Equal	Equal	Break stalemate

**Table 3. Motivations for Cartel-on-Cartel Attack based on Relative Strength**

A bioattack against Mexican federal law enforcement and military would be a reaction to effective counterdrug activities. A cartel may be forced into a corner or the military could be gaining a strategic advantage in the war. The cartel may view a biological weapon as the best way to counter the military's strategic position and to disrupt its momentum. After being attacked with a biological weapon, Mexican forces would surely suspend its operations, reassess its plans, and develop contingencies.

As a source of equipment, funding, and expertise for Mexican counterdrug efforts, the United States could also be targeted by a cartel, especially if the efforts become more effective or if the United States becomes more directly involved. An attack inside the United States could possibly discourage U.S. support or further involvement. Alternatively, an attack could also promote increased U.S. involvement. A cartel may be desperate enough to take the risk. The point of an attack on the United States could also be to make the U.S. government understand that there will be consequences to getting involved in the drug war and to supporting the Mexican law enforcement and military. The message will also be sent that the United States will not be able to kill cartel members with impunity.

In addition to attempting to accomplish an aforementioned goal, a motivational byproduct that will be present in any of these decisions will be the elevation of the



cartel's position of power. A cartel that has the nerve to take such a strategic risk and the capability to successfully launch a biological attack will be considered with increased respect and its demands and proposals will garner more attention. Its enemies will instantly recognize that it is a dangerous organization and that it should be treated carefully or avoided completely.

## **CONCLUSION**

Cartels are competent and dangerous organizations operating under increasing pressure. Each cartel is raiding territory while protecting their own from another's raids. In addition, they are fighting the Mexican and U.S. governments' attempts to wipe them all out. As proven by the accelerating body count and the evolving terror tactics, these organizations have no apprehensions about doing anything necessary to protect their interests and eliminate a threat. In addition to their ruthlessness, these organizations are intelligent enough to assess their situations and select a solution to their problems. So far, the solutions have involved escalating the violence, but their practices are becoming more sophisticated. Eventually, the environment that all of the fighting groups have created will devolve to such a point that one or several of the cartels will be forced to react in a vicious and novel way to transform the nature of the conflict. The goal of such an attack would be to rearrange the hierarchy of the cartels with the attacking one on top.

With such formidable enemies as the other cartels and the U.S. and Mexican governments, the attacking cartel must choose an appropriate weapon and attack plan. A large scale attack would be imperative, but massive killings have been done repeatedly

and have lost their effect. A new way of killing would attract attention and demand respect. The cartel that would strike first with a biological weapon would gain several strategic advantages. That cartel could make follow up plans while its enemies were caught off guard. The attacking cartel could use the element of surprise to advance against its foes, grab key territory, and consolidate its power. Additionally, such a sophisticated attack would cause the other sides to consider the repercussions of attacking such a capable organization. Such considerations would give that cartel wide latitude to act and the opportunity to be the aggressor.

If a cartel decided to reshape the strategic landscape of a conflict with such fearsome foes, then it would be imperative for the cartel to take an unprecedented step. With the levels of violence that have been attained, the only unprecedented step left is a WMD and the most ideal and practical WMD to use is a bioweapon.

## **CHAPTER 4**

### **Heating up the Plaza**

#### **INTRODUCTION**

Now that it has been established that the cartels are a threat to use a biological weapon, the next step is to determine how one of them would use one and what goals it would want to accomplish. This chapter describes a scenario involving the steps that may be taken by a cartel leading up to and during a biological attack. This scenario will branch into several directions to incorporate different possible attack details, goals, and motivations. The hostile cartel will pick a target, decide how to attack that target, and select a pathogenic agent and delivery method.

#### **Scenario Scope and Assumptions**

This scenario does not rule out any possibilities that are not covered. It is acknowledged that multiple variables exist when discussing biological attacks and that many permutations can arise to create different scenarios. It is possible that a cartel could launch a biological attack in a variety of ways for a variety of reasons. This scenario covers only a narrow range of paths that a cartel could take.

A cartel has many goals at the strategic, operational, and tactical levels and could be driving to accomplish several of them at once. In this scenario, only a strategic goal

will be covered. The cartel's goal will be to become more powerful and create an environment in Mexico that is more beneficial to the drug trade.

A cartel could choose from multiple targets and attack more than one. The cartel could pick from different nations and could choose from different entities within that nation to attack. The cartel in this scenario will attack the United States civilian population.

Different strategies and weapons could be used to attack the target. Explosives, small arms assaults, cyber attacks, or WMD are all viable threats and a cartel could have several reasons for picking one over the other. This cartel, however, will choose to use a biological weapon. It is assumed in this scenario that the cartel will want to display a certain amount of sophistication that is not characteristic of the other weapons and tactics. Additionally, a greater amount of user anonymity and attack covertness is possible with a bioweapon than with other options. For instance, if a cartel chose to conduct a small arms strike on an American shopping mall, then it is possible that one of the attackers could get wounded in a firefight and captured. The attacker could then divulge sensitive information under interrogation. This scenario assumes that the cartel will want to avoid such a situation, possibly out of concern of retaliation.

If desired, then the effects of the attack would be undetectable for a certain period of time due to the incubation periods of the biological agent. Furthermore, when the infections are detected, they may be attributed to natural causes rather than an attack. Such was the case in the first days of the anthrax attack.<sup>148</sup> With other weapons and tactics, the attack is generally detected immediately. It is assumed that this cartel will choose this feature instead of something more impactful and immediate, so that it can

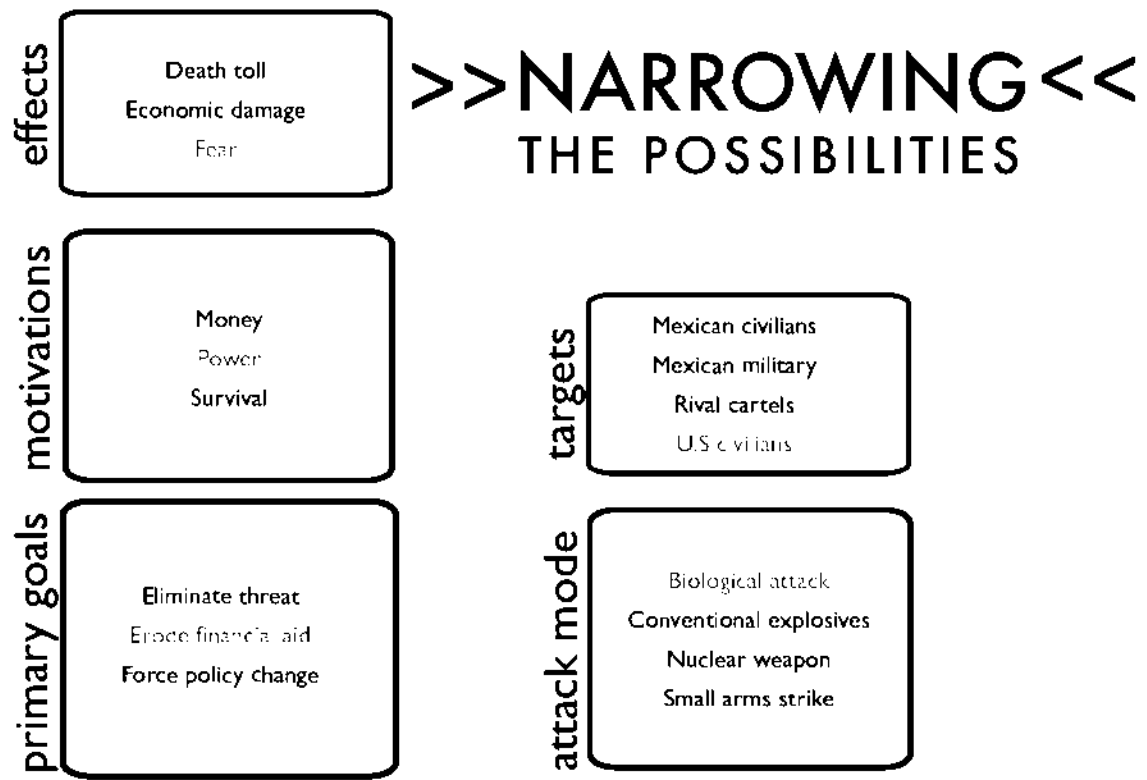
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<sup>148</sup> Cole, *Anthrax Letters*, 18.

decide on how to manipulate the attack based on the feedback it is receiving about public reactions and government responses.

Different effects can be caused by using a biological weapon. As discussed in the Chapter One, body count, economic damage, and fear are three such effects. This scenario will assume that this cartel will conclude that the best way to accomplish its goal is to generate fear in the U.S. public as opposed to killing a large number or devastating the economy. This cartel will also want the option of using the anonymity and covertness inherent in a bioweapon to help generate more panic and confusion. Although cartels have vast resources, it will be assumed that a cartel will choose to conduct a targeted, small-scale attack rather than a large-scale attack that uses wide-area aerosol dispersal. It is difficult and time-consuming to create large quantities of biological agent and this scenario's cartel could accomplish its goal by using a small amount.

In summary, this scenario will focus on a cartel that attacks the United States populace with three biological agents: tularemia, pneumonic plague, and Q fever, which is shown in the “targets” and “attack mode” boxes of Figure 9 on the following page. The cartel's motivation, as detailed in the “motivations” box of Figure 9, is to create an environment in Mexico that is more conducive to the drug trade and to increase its own



**Figure 9. Scenario Boundaries**

power and status. The purpose of this attack is to generate enough fear (illustrated in the Figure 9 “effects” box) in the public to sap the political will supporting the U.S. involvement of the Mexican drug war. As a result, U.S. financial and material support to the Mexican government will then diminish, which is represented in the “primary goals” box of Figure 9.

It will be assumed that this cartel will engage in various denial and deception practices in order to retain the option of concealing its identity. Anonymity may be the key to surviving massive retaliation from the United States. Multiple methods to hide the cartel’s involvement, including the use of a “See-Think-Do” denial and deception operation, will be discussed. Additionally, the cartel will use a front company,

specifically a livestock veterinarian clinic, to hide its financial connections to the bioweapon development. The veterinarian clinic will also provide a suitable place to research and develop the bioweapon. Once the biological agent is developed, it will be transported into the United States and dispersed using public bathroom automatic deodorizer sprayers.

### **Defining Success**

To begin, it is important to determine how the antagonistic cartel would measure a successful attack. It would define a successful attack as one that fulfilled its objective and accomplished their goals. In any given period of time, a cartel could have numerous goals. The following are three of many possible goals.

- One goal could be to improve its standing among the other cartels. An improved standing could increase its power and could negotiate business arrangements more effectively from a higher position of power.
- A second reason to launch a biological attack could be to intimidate the Mexican government. Such a show of ruthlessness and capability could scare the various factions of the government into paralysis or pit politicians against Calderon's counterdrug policies.
- Another goal could be to change the environment from one that is currently dominated by battles with Mexican government forces to one that is more favorable to cartel business and a government that is more permissive of the drug trade. To accomplish this goal, the target of an attack could be the Mexican forces. It could also be the U.S. support structure that is bolstering the Mexican

forces. For the sake of this scenario, the cartel will launch a bioattack in pursuit of this goal. The cartel will bear the brunt of the direct attack from the Mexican military while attacking the U.S. support foundation.

How could a cartel conduct an attack on the United States that would exploit the weaknesses unveiled by the 2001 anthrax attacks? The cartels have been given a good template for the way that different groups (public, law enforcement, politicians, media) in the U.S. will react to a biological attack. They now have an idea of how to manipulate the different groups to react or respond in a specific way.

The cartel could perform a strategic assessment of its goals and capabilities, the combative landscape, and its enemies' position and weaknesses. Based on this assessment, the cartel could then attack its enemies' center of gravity. Karl von Clausewitz defined the center of gravity as the point that all forces should focus on to defeat an enemy. Clausewitz generally considered an enemy's military as the center of gravity.<sup>149</sup> However, later military philosophies, such as General Ulysses S. Grant's total war doctrine, found that the center of gravity could also be the enemy's political will, civilian morale, or some other factor.<sup>150</sup>

### **AirLand Battle Parallel**

The concepts in this scenario of attacking the U.S. support structure of the Mexican military and selecting the enemy's civilian morale as the center of gravity are

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<sup>149</sup> Karl von Clausewitz, "On War," in *The Book of War*, ed. Caleb Carr (New York: Modern Library, 2000), 948.

<sup>150</sup> Robert C. Ehrhart, "The Civil War: Analysis, Modern Warfare and Society," *Modern Warfare and Society* 1 (1979): 15, [http://ndic.blackboard.com/webapps/portal/frameset.jsp?tab=courses&url=/bin/common/course.pl?course\\_id=\\_2926\\_1](http://ndic.blackboard.com/webapps/portal/frameset.jsp?tab=courses&url=/bin/common/course.pl?course_id=_2926_1) (accessed through Blackboard on October 15, 2009).



inspired by the AirLand Battle doctrine. The AirLand Battle doctrine attempted to solve the problem of defending Europe against a Soviet invasion during the Cold War.

Previous war plans failed to solve several persistent problems. During the 1960's and 1970's, the Soviets had built up their forces to the point that they greatly outnumbered NATO forces.<sup>151</sup> The Fulda Gap in Germany was Europe's most vulnerable spot and the most likely starting point of the Soviet Invasion.<sup>152</sup> Since NATO conventional forces would be overrun at the Fulda Gap, traditional doctrine relied on the use of nuclear weapons to stop Soviet forces.<sup>153</sup> This option, however, would destroy the area that NATO was supposed to protect.

The AirLand Battle doctrine attempted to address the defense of Europe without the use of nuclear weapons. Instead, the doctrine relied on coordination between air and ground forces and deepening the battlefield.<sup>154</sup> To counter the overwhelming Soviet forces, the doctrine dictated that NATO forces would attack and interdict the Soviet follow-on echelons.<sup>155</sup> Strikes deep into enemy formations would sever command and control connections and lines of communication.<sup>156</sup> The rear echelon attack would then isolate frontal forces and disrupt the momentum of the attack. The AirLand Battle

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<sup>151</sup> Alvin Toffler and Heidi Toffler, *War and Anti-war* (New York: Warner Books, 1993), 50-51.

<sup>152</sup> *Ibid.*, 51.

<sup>153</sup> *Ibid.*

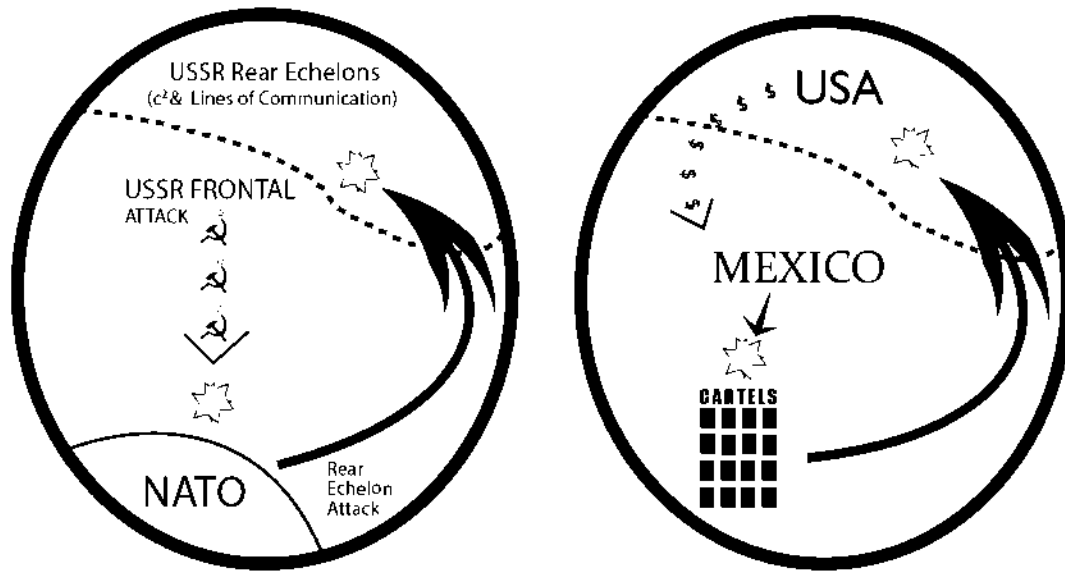
<sup>154</sup> John L. Romjue, "The Evolution of the Airland Battle Concept," *Air University Review* (May-June 1984), under "The Extended Battlefield," <http://www.airpower.maxwell.af.mil/airechronicles/aureview/1984/may-jun/romjue.html> (accessed June 8, 2010).

<sup>155</sup> *Ibid.*

<sup>156</sup> Toffler and Toffler, *War and Anti-war*, 60.

doctrine not only leveled the playing ground against the Soviet Union, but it also enabled the United States to project its power over great distances.<sup>157</sup>

#### AirLand Battle Doctrine vs. Narco-terrorist Bioattack



**Figure 10. AirLand Battle Parallel**

A drug cartel could take an analogous step to break the momentum of the U.S./Mexican-combined offensive. When placed in the paradigm of the AirLand Battle, the drug cartel would represent the NATO forces, the Mexican military would correspond to the Soviet front-line forces, and the United States would embody the supply and logistic echelons of the Soviet forces. The cartel would simultaneously withstand the blows from the frontal forces of the Mexican military and federal law enforcement while launching a rear-echelon bioattack against the United States. Such an attack could cut off cooperation between the two countries and reduce Mexico's capabilities to fight the cartels. Similarities between the AirLand Battle Doctrine and this scenario are represented in Figure 10. The figure shows that both the U.S. forces and the Mexican

<sup>157</sup> Toffler and Toffler, *War and Anti-war*, 62.

cartels would have to endure heavy frontal blows from a larger force and simultaneously attack the more vulnerable part of the enemy to sever the tip of the spear from its shaft, thereby taking away its ability to conduct a sustaining thrust.

## **THE WEAPON SELECTION**

### **Elaboration on the Cartel's Goal**

A cartel would have to look at its strategic position relative to its enemies and in the context of the environment. If a cartel determined that using previous tactics to follow previous strategies will not enhance its position, then it may conclude that a strategic shift is necessary.

As a general proposition, a cartel's goal is to maximize its money-making potential. It does this by conducting operations that tap into the full value of its routes and territory. Regular operating costs consist of defending against rival cartels, raiding territory, deceiving or co-opting government and military officials, and losing product to effective law enforcement efforts. Current operating costs also include fighting Mexican military forces. Cartel forces have unsuccessfully attempted to beat off the military through frontal assaults.<sup>158</sup> The military's ability to withstand challenges is partly due to the financial and political support of the United States, including the \$1 billion that it has been receiving through the Merida Initiative counter-drug agreement between the two countries.<sup>159</sup> American money and assistance has been a constant throughout the Mexican drug wars and there is the danger that American involvement could grow and

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<sup>158</sup> CBSnews.com, "Mexico Drug Gangs Attack."

<sup>159</sup> U.S. Department of State, "The Merida Initiative."

become more direct. A cartel could view the United States as a reason for the current counter-drug offensive and an increasing threat. A cartel leader may believe that decreasing U.S. involvement in the drug war may bring an optimal environment for cartel activities. Additionally, a cartel that was responsible for reducing American involvement could be held in higher regard by its enemy cartels.

A cartel could attempt to force the United States to change its counter-drug policies by attacking its political will. U.S. political will is supported by civilian morale. Civilian morale is often the American, or any other democracy's, center of gravity. Furthermore, political will may also crumble at the threat of hurting civilian morale due to loss of American lives, regardless of whether those lives are civilian or military. It can be argued that this happened during the 1993 Somali conflict. Before the conflict there was a quick build-up of U.S. forces with the intent of capturing warlord, Mohamed Farrah Aidid. However, after the conflict in which eighteen U.S. soldiers were killed, U.S. forces were withdrawn and the hunt for Aidid was abandoned by President Bill Clinton at the urging of members of Congress.<sup>160</sup> During this engagement, American forces were withdrawn out of fear that dead Americans would demoralize the population. When civilian enthusiasm for a war is high, then political fortitude to fight a war is more resilient. Conversely, when the public has lost the heart to fight, then political dedication to a war crumbles, as was the case with the Vietnam War.<sup>161</sup> Therefore, if a cartel's desire is to create a more favorable operating environment for his cartel, a leader's

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<sup>160</sup> Frontline, "Ambush in Mogadishu," WGBH Educational Foundation, <http://www.phs.org/wgbh/pages/frontline/shows/ambush/etc/cron.html> (accessed on June 7, 2010); John M. Broder and Michael Ross, "Senate Agrees to Withdrawal from Somalia before April," *Los Angeles Times*, October 15, 1993, <http://tech.mit.edu/V113/N49/somalia2.49w.html> (accessed on June 7, 2010).

<sup>161</sup> Thomas X. Hammes, *The Sling and the Stone: On War in the 21<sup>st</sup> Century* (St. Paul, MN: Zenith Press, 2006), 67.

objective could then be to reduce U.S. involvement in the drug war by attacking civilian enthusiasm to fight and weakening political resolve.

### **Matching the Weapon to the Goal**

As mentioned in the previous chapter, a powerful weapon must be wielded when combating the United States. A biological attack against the U.S. population would be such a weapon. To devastate civilian morale, a bioattack would focus on creating the maximum amount of fear in the U.S. population. Several of the methods discussed in Chapter Two could be used to elicit such fear. The attack could cause panic by sending various messages through the media to the public and policy-makers. Such messages could be threatening and convey pieces of the plan or the messages could be fabricated to drum up confusion. Like the 2001 anthrax attacks, this cartel attack will occur in several phases. Different phases will draw out the attack and give the impression that it could last for a long time. Different phases will enhance the fear of the unknown. A high body count, while an effect of its own, would also boost public fear and panic. The population could be frightened and demoralized even further if the body count consisted of specific groups of people, especially children.

Fortunately for a cartel, a bioattack allows it to adjust the scale and effects of the attack to match the size of the enemies. With an enemy as powerful as the United States, a cartel has the ability to amplify the scale of the attack. In addition to the scale of the attack, the cartel can control certain factors of the attack and even transform the nature of the attack after it has already begun. One such example is the ability to adjust the stealth of the attack. A biological weapon gives the cartel boss the option of remaining silent to

make the outbreak seem like a natural occurrence, to claim credit from the beginning, or some option in between. Another benefit is that a bioattack demonstrates a level of sophistication that tells U.S. policymakers that they are facing a formidable adversary. A high level of competence and capability will scare the population and possibly intimidate the national leaders. However, a biological weapon has the least controllable and predictable effects compared to chemical, nuclear, and explosive weapons. This is especially true when using a transmissible biological agent. A biological agent could be more or less virulent than expected. Its effects could last a long or short time. The effects could even reverse course and infect the attackers and other members behind the attack. This unpredictability, however, could be harnessed by the cartel and cause more fear.

### **The Selection Process**

Once the cartel knows that it wants to scare U.S. civilians and sap U.S. political will, it must select a suitable pathogen. The cartel leader will want a fear inducing pathogen. The fear generating capability of a biological agent could be judged by many characteristics. In this scenario, an agent is judged on its ability to cause terror and panic by three characteristics: its bodily effects, its curability, and its transmissibility. An agent that causes severe pain and bodily damage, has visible or graphic symptoms that the media and public imagination can take hold of, is difficult to cure, and is extremely contagious would be necessary. Pathogens such as smallpox or Marburg hemorrhagic fever would be ideal.

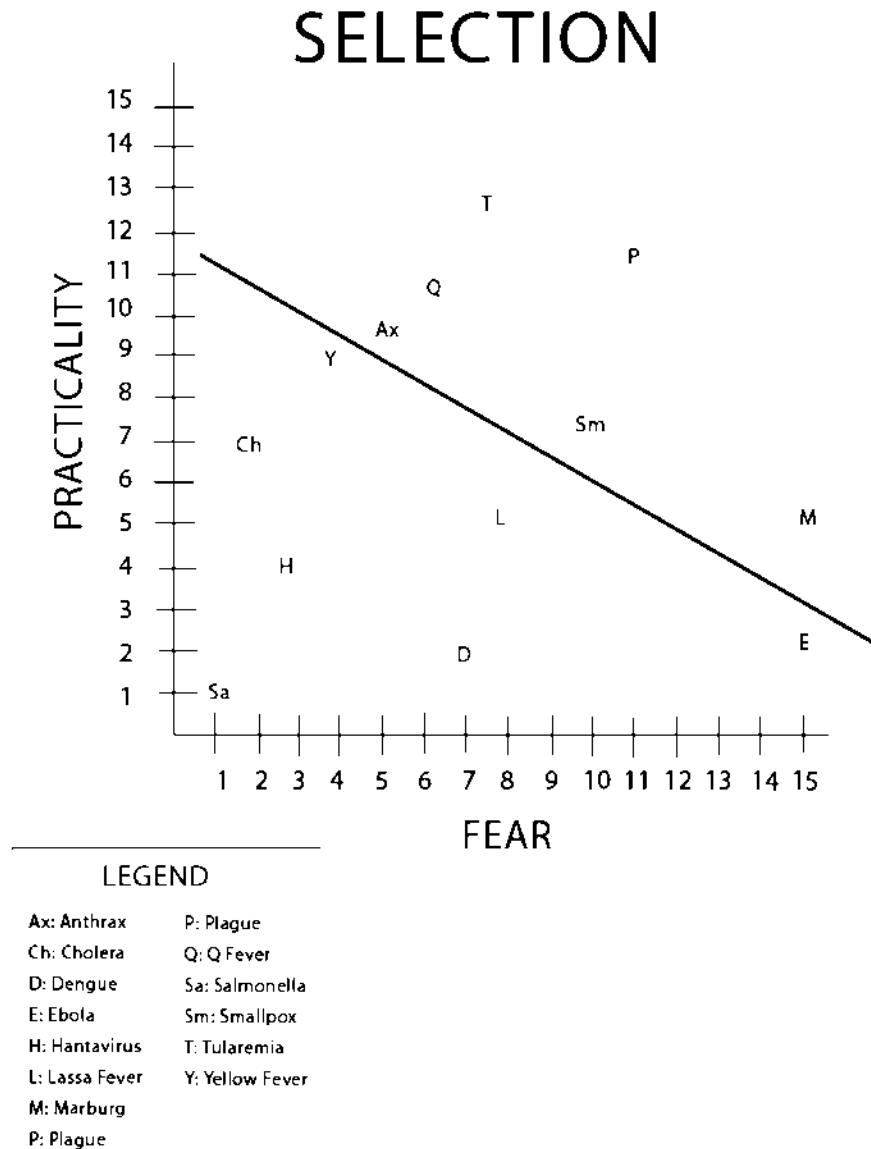
A bioattack planner, however, must also consider practical limitations. Smallpox and Marburg are difficult to attain. Other attractive agents are difficult to cultivate, prepare, or disperse. A technician would like to work with an agent that is easily acquired, grown, stored, and dispersed as an aerosol.

When selecting an agent for a biological attack, a balance must be met between the amount of fear caused by an agent and the practicality of using an undemanding agent. The below chart in Figure 11 plots the terror inducement versus the practicality of an agent. Factors used to rank the terrorizing ability of an agent were bodily symptoms, pain, familiarity of the agent to the public, transmissibility, and curability. Factors used to rank the practicality were accessibility, manufacturability, ease of dispersion, prior weaponization, stability as an aerosol, persistence in the environment, storability. Pathogenic characteristics found on the CDC bioterrorism agent website, Mayo Clinic Diseases and Conditions website, the U.S. Army Medical Department Borden Institute website, a CRS report written by Dana A. Shea and Frank Gottron, and a report prepared by Dr. Peter Leitner were used to select and rank the pathogens.<sup>162</sup> As one can see the pathogens are spread across the spectrum of practicality and terror production. The ideal pathogen would be found in the upper right corner of the graph as it would possess

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<sup>162</sup> Center for Disease Control and Prevention, "Bioterrorism Agents/Diseases," <http://www.bt.cdc.gov/agent/agentlist.asp> (accessed on June 8, 2010); Mayo Clinic, "Diseases and Conditions," <http://www.mayoclinic.com/health/DiseasesIndex/DiseasesIndex/METHOD=displayAlphaList&LISTTYPE=mcDisease&LETTER=1> (accessed on June 8, 2010); U.S. Army Medical Department, Borden Institute, "Medical Aspects of Chemical and Biological Warfare," [http://www.bordeninstitute.army.mil/published\\_volumes/cbcbio/cbcbio.html](http://www.bordeninstitute.army.mil/published_volumes/cbcbio/cbcbio.html) (accessed on June 8, 2010); U.S. Congressional Research Service, *Small-scale Terrorist Attacks Using Chemical and Biological Agents: An Assessment Framework and Preliminary Comparisons*, by Dana A. Shea and Frank Gottron, 24-25, <http://www.fas.org/irp/crs/RL32391.pdf> (accessed on June 8, 2010); Leitner, "Global Terrorists' Profiles and CBRE Threats."

maximum practicality and fear generation. Conversely, a pathogen found in the lower left corner would be the least desirable as it would be neither practical nor terrorizing.



**Figure 11. Biological Agent Selection Graph**

According to the chart tularemia, pneumonic plague, Q-fever, and smallpox are the closest to the upper-right corner which signifies that they have the best balance between practicality and fear inducement. A side note about smallpox: if this virus was more accessible to the cartel in this scenario, then its ability to be weaponized and cause



fear would make it an extremely practical and most ideal bioweapon. As it is, however, smallpox is no longer found in nature and exists most readily in heavily protected laboratories. Although it is possible that a cartel could use its vast resources to look for and acquire smallpox, this scenario is assuming that the cartel would exclude smallpox as a probable bioweapon.

Tularemia, pneumonic plague, and Q-fever still remain as viable options for selection by the cartel's bioweapon developer. The developer could pick any or all of these agents.

**Tularemia** Tularemia is caused by the bacterium *Francisella tularensis*. Naturally, the bacteria are found in rodents and can be transmitted through ticks, mosquitoes, and biting flies. Tularemia can also be spread through handling diseased carcasses, eating and drinking contaminated food and water, and inhaling the bacteria. Symptoms of

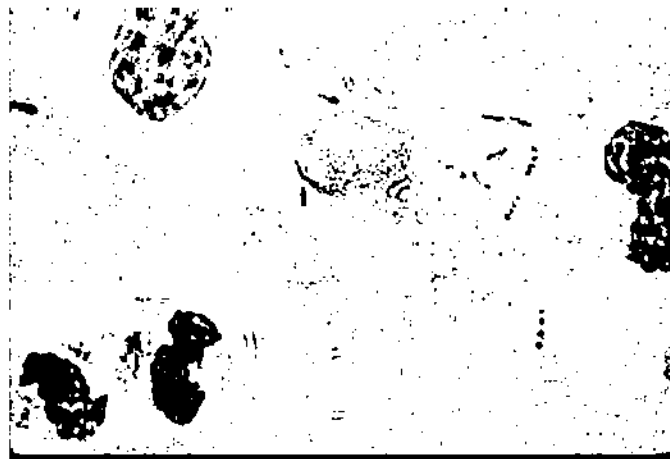


**Figure 12. Tularemia Infection**

**Source:** Hardin Library for the Health Sciences, University of Iowa, "Tularemia Picture," <http://www.lib.uiowa.edu/hardin/md/cdc/tularemia1.html> (accessed on June 7, 2010).

tularemia appear three to fourteen days after exposure and include skin lesions (as shown in Figure 12) fever, diarrhea, joint pain, headaches, and progressive weakness. Tularemia is generally treated with antibiotics.<sup>163</sup> Tularemia kills 5% of those infected without antibiotic treatment and 1% of those infected with antibiotic treatment.<sup>164</sup>

**Pneumonic plague** Pneumonic plague is caused by the bacterium *Yersinia pestis* (shown among blood cells in Figure 13). The bubonic form of the disease is spread through fleas that received the disease from infected rodents. The pneumonic form is spread by inhaling aerosolized droplets of an infected individual.<sup>165</sup> Symptoms of pneumonic plague arise two to six days after exposure and include fever,



**Figure 13. Plague Bacteria, *Yersinia pestis***

**Source:** Center for Disease Control and Prevention, “Image: Plague Bacteria in Blood,” <http://www.cdc.gov/ncidod/dvbid/plague/pl.htm> (accessed on June 7, 2010).

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<sup>163</sup> Center for Disease Control and Prevention, “Key Facts about Tularemia,” under “How is Tularemia Treated?” <http://www.bt.cdc.gov/agent/tularemia/facts.asp> (accessed on June 8, 2010).

<sup>164</sup> MedlinePlus, “Tularemia,” U.S. National Library of Medicine and U.S. National Institutes of Health, under “Outlook (Prognosis),” <http://www.nlm.nih.gov/medlineplus/ency/article/000856.htm> (accessed on June 8, 2010).

<sup>165</sup> World Health Organization, “Plague,” under “Overview,” <http://www.who.int/mediacentre/factsheets/fs267/en/> (accessed on June 8, 2010).

difficult breathing, and a persistent cough that produces bloody sputum.<sup>166</sup> Pneumonic plague is generally treated with antibiotics. Pneumonic plague kills 30-60% of the infected that go untreated, but timely diagnosis and appropriate treatment cures almost all patients.<sup>167</sup>

**Q fever** Q fever is caused by the bacterium *Coxiella burnetii*. Q fever is commonly found in sheep, goats, and cattle and is spread through urine, feces, birth byproducts, and milk. Additionally, Q fever can be transmitted through dried forms of these substances which turn into dust that can be inhaled by humans.<sup>168</sup> It is possible but extremely rare for Q fever to be transmitted from human to human.<sup>169</sup> Symptoms of Q fever are apparent two to three weeks after exposure and include severe headaches and muscle pain, diarrhea and vomiting, chest and abdominal pain, and fatigue. Patients can also have a chronic Q fever infection.<sup>170</sup> Q fever can be treated with antibiotics.<sup>171</sup> Less than 1% of those with an acute infection die from Q fever. A chronic infection of Q

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<sup>166</sup> Center for Disease Control and Prevention, "Plague Fact Sheet," under "Q. What are the signs and symptoms of plague?" <http://www.cdc.gov/ncidod/dvbid/plague/resources/plagueFactSheet.pdf> (accessed on June 9, 2010).

<sup>167</sup> World Health Organization, "Plague," under "Overview."

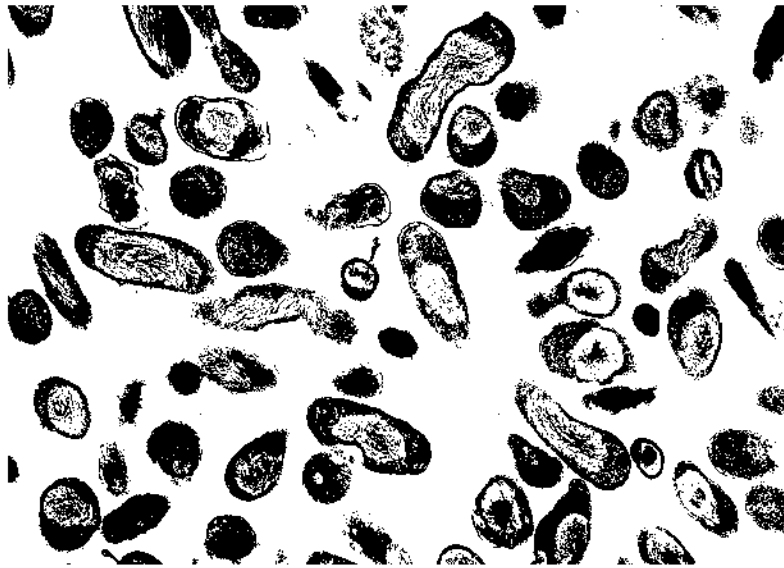
<sup>168</sup> Mayo Clinic Staff, "Q fever: Causes," Mayo Clinic, <http://www.mayoclinic.com/health/q-fever/DS00960/DSECTION=causes> (accessed on June 9, 2010).

<sup>169</sup> Julie O'Neill, "What is Q Fever," from *Q Fever Information Kit for the Australian Meat Industry*, Australian Q Fever Register, under "Transmission to Humans," <http://www.qfever.org/aboutqfever.php> (accessed on June 9, 2010).

<sup>170</sup> Mayo Clinic Staff, "Q fever: Symptoms," Mayo Clinic, <http://www.mayoclinic.com/health/q-fever/DS00960/DSECTION=symptoms> (accessed on June 9, 2010).

<sup>171</sup> Mayo Clinic Staff, "Q fever: Treatments and Drugs," Mayo Clinic, <http://www.mayoclinic.com/health/q-fever/DS00960/DSECTION=treatments-and-drugs> (accessed on June 9, 2010).

fever, however, results in close to 100% mortality if untreated and 10% if treated with antibiotics.<sup>172</sup> Q fever bacteria cells are shown in Figure 14.



**Figure 14. Q fever Bacteria, *Coxiella burnetii***

**Source:** GlobalSecurity.org, "Weapons of Mass Destruction (WMD): Q fever,"

[http://www.globalsecurity.org/wmd/intro/bio\\_qfever-pics.htm](http://www.globalsecurity.org/wmd/intro/bio_qfever-pics.htm) (accessed on June 7, 2010).

## THE DECEPTION

A biological weapon enables the attacker to conceal its identity and deceive the target in different ways and at different levels. For example, a cartel could take advantage of a biological agent's incubation time (time between exposure and symptom onset) and launch a biological attack that would not immediately attract attention. This gives the cartel the option of anonymity in order to avoid retaliation or amplify the population's fear of the unknown.<sup>173</sup> A biological weapon is perfect for someone who is

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<sup>172</sup> Vinod K. Dhawan, "Q Fever," eMedicine, under "Mortality/Morbidity," <http://emedicine.medscape.com/article/968146-overview> (access on June 9, 2010).

looking to deceive or confuse its target. Furthermore, a bioattack and a denial and deception operation (D&D) could complement each other very well.

### **D&D Defined**

D&D is composed of denial and deception. Denial is the act of concealing information that allows an adversary to learn a truth.<sup>174</sup> A denial operation blocks access to information channels. Examples of denial activities include using underground compounds to hide certain practices from technical or human surveillance and organizational communication security rules that discourage members from giving information to outsiders. Deception leads an adversary to believe something that is not true.<sup>175</sup> A denial and deception operation (D&D) guides an adversary away from the truth and towards a perception created by the deceiver. The deceiver manipulates the adversary's perception to lead him to act in a way that benefits the deceiver. In other circumstances, the deceiver may manipulate the adversary into doing nothing as opposed to a specific action. Thus, D&D can increase or decrease ambiguity. An M-Type (misleading) D&D operation reduces ambiguity because it leads a target to believe a specific story that is not true.<sup>176</sup> The target of an M-Type operation believes that it is gaining clarity. A deceiver will conduct an M-Type operation when it wants its target to

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<sup>173</sup> Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *First Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction: I. Assessing the Threat*, 11, <http://www.rand.org/nsrd/terrpanel/terror.pdf> (accessed on June 9, 2010).

<sup>174</sup> Roy Godson and James J. Wirtz, eds., *Strategic Denial and Deception: The Twenty-First Century Challenge* (New Brunswick: Transaction Publishers, 2008), 1.

<sup>175</sup> Ibid.

<sup>176</sup> Jon Latimer, *Deception in War* (Woodstock, NY: Overlook Press, 2001), 71-72.

act in a specific manner.<sup>177</sup> An A-Type (ambiguity) operation increases ambiguity and creates a more confusing picture for the target. A deceiver conducts an A-Type operation when it desires inaction from a target.<sup>178</sup>

D&D can be conducted at the strategic, operational, or tactical levels. Strategic D&D is designed to manipulate the actions of a nation, thus targets chiefs of state, policy makers, and military commanders.<sup>179</sup> Operational and tactical D&D is conducted at the operational and tactical levels to influence respective leaders, but an aggregate of operational or tactical D&D can also affect strategic-level leaders. This scenario will explore what strategic D&D performed by a non-state actor might look like.

Strategic D&D is generally too expensive and time consuming to be conducted at the non-state actor level. Complex criminal and terrorist organizations such as the Colombian Cali Cartel, the Irish Republican Army, and the U.S. and Sicilian mafias, however, have conducted D&D in the past.<sup>180</sup> Examples discussed throughout Chapter Three demonstrate that Mexican cartels have the resources, strategic mindset, and operational knowledge needed to conduct D&D. According to Godson and Wirtz, D&D allows criminals and terrorists to make their environments more conducive to accomplishing their illicit objectives.<sup>181</sup> Criminals and terrorists also use D&D to

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<sup>177</sup> Latimer, *Deception in War*, 71-72.

<sup>178</sup> Ibid.

<sup>179</sup> Abram Shulsky, *Strategic Denial and Deception: The Twenty-First Century Challenge*, ed. Roy Godson and James J. Wirtz, (New Brunswick: Transaction Publishers, 2008), 17.

<sup>180</sup> Godson and Wirtz, *Strategic Denial and Deception*, 6.

<sup>181</sup> Ibid., 2.

eliminate their rivals and mislead investigative efforts.<sup>182</sup> In this scenario, the cartel will use D&D to do both.

### **Levels of Covertness**

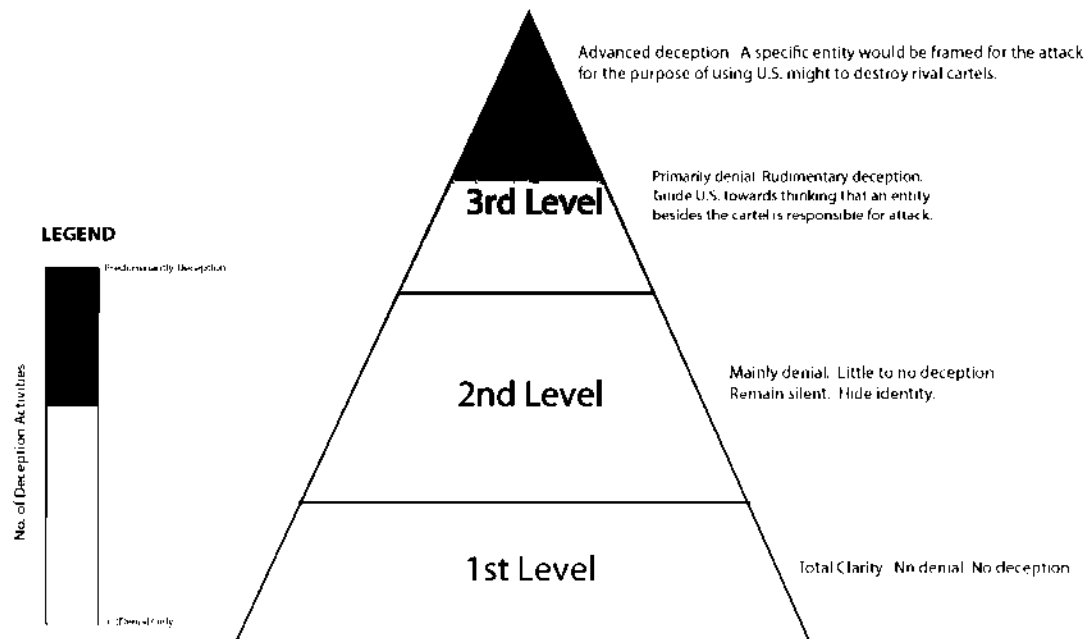
During a bioattack, the cartel could operate at four different levels of covertness. Each level is more complicated, requires more planning and resources, and gives the target a more defined, though inaccurate, picture of the attacker's identity, means, and motive. A visual representation is provided in Figure 15 on the following page. The Levels of Covertness are represented as a pyramid because each successive level builds on the previous one. Figure 15 also represents the principle that no deception can exist without baseline denial. This is illustrated with the yellow base of the 2<sup>nd</sup> Level. Yellow represents an operation that consists of all denial activities and no deception activities. As the pyramid changes to red, the operation maintains a baseline of denial activities but accumulates more deception activities.

- The first level would involve no deception because the cartel would take credit for the attack. This action could be performed if the cartel believed that the power and respect gained from committing the bioattack would outweigh the risk involved with taking credit for it.

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<sup>182</sup> Godson and Wirtz, *Strategic Denial and Deception*, 6.

# Levels of Coverttness



**Figure 15. Levels of Coverttness**

- During the second level, the cartel could remain completely silent about the attack and not try to manipulate U.S. beliefs on the causes or identities of those behind the attack. Mainly denial would be conducted at this level. Almost no deception planning would be done at this level.
- In the third level of coverttness, the cartel would cause the United States to believe that someone other than the cartel was responsible for the attack. The cartel would work to hide their connections to the attack, and attempt to guide the United States towards blaming a specific, possibly imaginary, entity. Hunting imaginary groups would dilute law enforcement and intelligence ability to track down the responsible cartel. At this level, the cartel would perform primarily



denial activities along with some rudimentary deception activities. This would allow the attacker to reap all of the benefits and divert the bad consequences. Additionally, with this step the cartel is floating a balloon to gauge the mood of the public and the resolve of the government. Such information will help the cartel decide on its next step and whether or not to come out from the shadows and claim credit for the attack.

In addition to concealing the cartel's involvement with the attack, bioweapon production would be detached from the cartel. All of the logistics and administration needed to build the weapon could be grouped under an umbrella company that may appear as an entity separate from the cartel. Financial steps would be taken to ensure that the front company used to house the development would not lead to the cartel. Thus, if law enforcement traced the attack to the front company, it would then reach a dead end. Any company on the cartel's payroll could be used as a front company to plan the attack, design the weapon, and direct attention away from the cartel.

- In the fourth level of covertness, the cartel would frame a specific entity for the attack for the purpose of using U.S. power to destroy that entity. The cartel would need to perform advanced deception techniques to successfully accomplish this endeavor. The fourth level could help mitigate the risks of attacking such a formidable foe as the United States. Attacking the United States could produce unintended consequences, such as massive retaliation. The fourth level of covertness, however, could not only account for those unintended consequences, but also redirect the retaliation to the cartel's advantage.

## See-Think-Do

“See, Think, Do” describes a specific deception methodology that would be useful to a Mexican cartel aiming to deceive the United States. In the simplest terms, a deceiver makes an adversary *see* something that makes it *think* a certain way in order to make it *do* a specific action. A deceiver must, however, conceive of a See-Think-Do scenario backwards. The deceiver must plan what it wants the adversary to do, what thoughts or beliefs would cause the adversary to act in that specific way, and what it would want the adversary to see to make it have those thoughts or beliefs. This process is represented in Figure 16.

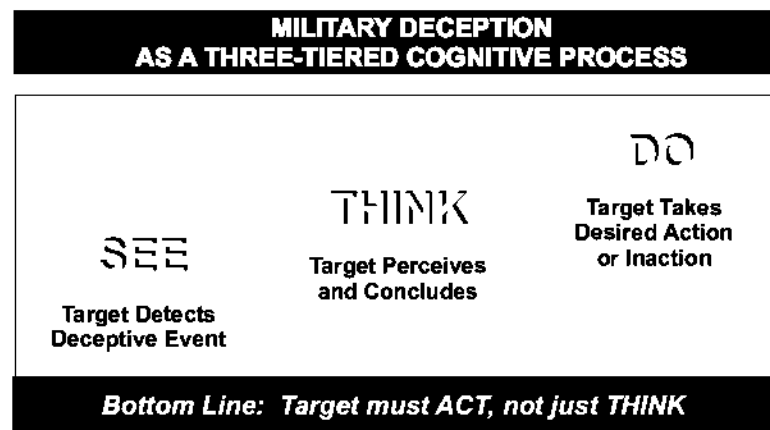


Figure 16. See-Think-Do Process

Source: U.S. Joint Chiefs of Staff, *Military Deception, Joint Publication 3-13.4* (Washington, D.C.: U.S. Joint Chiefs of Staff, July 13, 2006), IV-2, [www.information-retrieval.info/docs/jp3\\_13\\_4.pdf](http://www.information-retrieval.info/docs/jp3_13_4.pdf) (accessed on June 9, 2010).

To conduct a See-Think-Do operation, the deceiver must realize its goals and objectives. A deceiver’s goal describes how D&D will help accomplish the deceiver’s

ultimate mission.<sup>183</sup> A deceiver's objective outlines the actions that it desires the adversary to take in reaction to the D&D. The objective must be in support of the deceiver's goal. The goal of the cartel behind the bioattack is not only to make Mexico a more conducive place to traffic drugs but also to increase its own standing and power by reducing the level of U.S. involvement in the Mexican drug war. The goal of the D&D is to protect the cartel by confusing or misdirecting the United States on the identity of the attacker. If the bioattack causes the United States to become more involved, then a See-Think-Do operation would help concentrate that involvement on the cartel's rivals. A cartel could use D&D to frame another cartel for the bioattack on the United States. The United States would then direct its retaliatory attack against the framed cartel, thereby helping the responsible cartel destroy its rivals. Thus, the objective of the cartel's D&D is to keep the United States from attacking the cartel and to attack rival cartels to further its goal of increasing its power and position.

Precedence for this action is called "heating up the plaza".<sup>184</sup> On March 14, 2010, drive-by shooters targeted, chased, and killed three employees of the U.S. Consulate in Juarez.<sup>185</sup> On April 11, 2010, assailants tossed a grenade into the U.S. Consulate in Nuevo Laredo. Mexican interior minister, Fernando Gómez Mont said that these are examples of increasingly sophisticated techniques designed to lure U.S. and Mexican law enforcement and military forces into a specific area to weaken rival cartels. "Heating up

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<sup>183</sup> U.S. Joint Chiefs of Staff, *Military Deception, Joint Publication 3-13.4*, IV-3.

<sup>184</sup> William Booth, "Drug War Violence Appears in Mexico's Northeast, Near Texas Border," *Washington Post*, April 21, 2010. <http://www.washingtonpost.com/wp-dyn/content/article/2010/04/20/AR2010042004961.html> (accessed on June 9, 2010).

<sup>185</sup> Mariano Castillo and Jamie Crawford, "3 People Associated with U.S. Consulate Killed in Mexico," *CNN*, March 15, 2010, <http://edition.cnn.com/2010/WORLD/americas/03/14/mexico.violence/?hpt=TI&imw=Y> (accessed on June 10, 2010).

the plaza” is slang for luring law enforcement into an area and framing someone else for the provocation. A plaza is a trafficking route into the United States.<sup>186</sup>

### **A Deceptive Environment**

Mexico is the perfect environment to conduct D&D. Furthermore, the current condition of Mexico provides a cartel with the perfect topography to hide its connection to a bioattack and blame another cartel. There are several factors now endemic to Mexico that were created by the cartels and the drug war that enhance a cartel’s ability to conduct D&D. To begin with, the drug war provides ample background noise into which a cartel can blend. It is difficult for law enforcement and intelligence entities to track cartel activities in such a disruptive environment. The fog of war is now a factor due to prolonged confrontations between the military and the cartels. Assigning accountability for crimes is secondary to ending the violence and destruction. Many leads wind up in dead ends either because cartels are concealing their activities or because the military has destroyed or killed evidence and sources. The difficulty of uncovering cartel D&D is compounded by the fact that cartels often operate in urban environments and slums. Scott Gerwehr and Russell W. Glenn point out that the scope of deceptions is greater in urban centers and urban background noise further degrade counterdeception practices.<sup>187</sup>

Gerwehr and Glenn also point out that noncombatants further complicate matters.<sup>188</sup> The noncombatant situation in Mexico is even more severe due to

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<sup>186</sup> Booth, “Drug War Violence Appears.”

<sup>187</sup> Scott Gerwehr and Russell W. Glenn, *The Art of Darkness: Deception and Urban Operations* (Santa Monica, CA: RAND, 2000), xii.

<sup>188</sup> Ibid.

corruption's prevalence. A cartel can control regular people on the street and people in high levels of business, government, military, and intelligence. For example, the Beltran Leyva Organization headed a corruption racket that used high level members of the Mexican attorney general's office and the federal police, to include the head of the organized crime unit.<sup>189</sup> Additionally, in the summer of 2008, a U.S.-Mexico joint operation arrested a dozen high-ranking Mexican federal police officials, including the drug czar, for spying for the Sinaloa cartel.<sup>190</sup> In fact, government corruption is so rampant that Mexican officials are no longer allowed to participate in many U.S.-led counter-smuggling efforts because of concerns about leaks and spying.<sup>191</sup> Such corruption is not only conducive to criminal activity but can also conceal how criminal activity is conducted and who is responsible. In general, the Mexican cartels exercise considerable control over the government channels in Mexico. Such control would allow the cartel behind the bioattack to hide its biological weapon and point U.S. and Mexican national security efforts in the direction of another cartel.

Overall, Mexican law enforcement capabilities are too overwhelmed and spread too thin to decipher D&D and discover who was responsible for a bioattack. Corruption in every facet of Mexican government and civilian life weakens law enforcement investigative capabilities. Investigations are also hindered by military operations, the destruction of the drug war, and the sheer number of crimes and murders.

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<sup>189</sup> William Booth and Steve Fainaru, "Mexican Drug Lord Killed in Gunfight with Federal Forces," *Washington Post*, December 18, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/12/17/AR2009121700260.html> (accessed on June 11, 2010).

<sup>190</sup> MSNBC, "U.S. Gives Mexico \$197 Million to Battle Cartels," <http://www.msnbc.msn.com/id/28039287/> (accessed on June 11, 2010).

<sup>191</sup> Gregory David, "The Hidden Threat to U.S. National Security: Human Smuggling Networks" (master's thesis, National Defense Intelligence College, 2004), 57.

Another hindrance to unscrambling cartel D&D is the constantly transforming composition of a cartel. Alliances are constantly forming and dissolving between cartels. Members are constantly switching sides or working for multiple cartels. Numerous examples exist. The Sinaloa Cartel was allied with the Beltran Leyva Organization, and then began battling each other. In the past, Los Zetas have been part of the Gulf Cartel, allied with the Beltran Leyva Organization, then on their own, fighting the Gulf Cartel and Beltran Leyva organization. Members of the Juarez and Tijuana cartels have joined the Sinaloa Cartel. These instances can be found in Chapter Three from pages 63 to 66. Such personnel movement between cartels makes it difficult to discern who is presently working with whom. A cartel could use such fluidity to mask its involvement in developing and launching a biological weapon. Additionally, the personnel transfers make it easier for a cartel to frame another cartel for the bioattack.

## **THE LAB**

The cartel's attack and deception plans will converge with the invention of a front company. This company can be used to develop the bioweapon and serve as the nexus that connects a framed entity to the biological attack. This company will have several characteristics that make it effective as a research lab and a means for embodying the cartel's D&D.

The legitimate portion of this business will disguise the bioweapon development portion. The cartel will have a myriad of businesses in numerous industries to choose from. The Sinaloa cartel employs directly or indirectly 520,000 of the 2.6 million

residents of the Sinaloa state.<sup>192</sup> Connected businesses include day care centers, car dealerships, meat packing plants, stables, dairies, hotels, and mining companies.<sup>193</sup> An ideal business would be one in the medical, veterinarian, or animal health industry where the presence of dual use biological equipment would not be unusual. This would allow a technician to develop and prepare the biological weapon without raising any alarms. For the sake of this scenario, a livestock veterinarian clinic will be used. Ample space and equipment will then be available.

For D&D purposes this lab should be located in territory that is being disputed by several cartels. The lab could alternatively be located within the cartel's own undisputed territory to reduce the risk of harassment from other cartels, but it would then be more difficult for the cartel to deny connections with the lab if it was ever discovered. By locating this lab in disputed territory, the responsible cartel could shift the perception of ownership to another cartel when appropriate.

The clinic will only employ a skeleton crew. A small number of employees is an operational security (OPSEC) measure designed to prevent leaks about the bioweapon and the true ownership of the clinic. While a large number of employees also has its own OPSEC benefits, such as more effective compartmentalization to prevent any one person from acquiring too much information, for the sake of this scenario only a small number will be employed at the front company. Fewer people are easier to track and leaks would be easier to trace back to the leaker. Additionally, it would be cheaper to pay the employees and their families to remain silent. Besides the technicians involved in

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<sup>192</sup> Chris Hawley, "Drug Cartels Threaten Mexican Stability," *USA Today*, February 2, 2010, under "Banks, stables, hotels," [http://www.usatoday.com/news/washington/2010-02-10-mexico-cartels\\_N.htm](http://www.usatoday.com/news/washington/2010-02-10-mexico-cartels_N.htm) (accessed on June 11, 2010).

<sup>193</sup> Ibid.

developing the weapon, no one will have knowledge of the weapon. OPSEC dictates that even the technicians will have limited knowledge of the operation and the administration of the clinic/lab. Those that do work on the clinic side or are responsible for the criminal front aspect of the clinic should have ties with other cartels. The cartel liaison to the front, who oversees the criminal interests and finances of the business, the one who signs the checks so to speak, should especially have worked previously with another cartel. These ties will exploit the morphing nature of the cartels and point investigators who are following the operational funding in the direction of another cartel. For OPSEC reasons, the cartel liaison should have little access to the bioweapon side of the business, in spite of his position.

Additional steps to enhance the D&D that do not involve the front company could be taken leading up to the attack. The cartel could move dependable sources in the Mexican federal government; especially in the military, intelligence, and law enforcement fields; into strategic positions that will be able to liaison with U.S. intelligence and law enforcement to pass false information pinning a rival cartel for the bioattack. With conduits in place to send false information to U.S. intelligence, the cartel can choose if and when to initiate its D&D at any point during the attack. To preserve OPSEC, intelligence passed to cartel sources will not be attributable to the cartel.

If the cartel was dedicated to the D&D from the outset of the attack, then bits of information could be sent prior to the attack. Even evidence, such as reports of infected livestock could be sent through the cartel's government channels. To increase the legitimacy of the D&D, just before the attack, an infected employee of the clinic could report to government sources and expose the bioweapon lab. By this time, the attackers



would already be staging or dispersing the bioweapon and the lab would no longer be used. The employee had no idea who he truly worked for and all of the D&D traps in place would attribute the lab to the rival cartel. This would trigger the D&D but close access to the other levels of covertness.

### **Exploitation of U.S. Biodefense Expansion to Obtain a Bioweapon Scientist**

As mentioned in the previous chapter, a cartel would have the ability to afford any bioweapon researcher but would not need to since the biological weapon development process has been said to be as difficult as making beer.<sup>194</sup> There is, however, a growing source from which a cartel could pluck a bioweapon scientist: the U.S. biodefense industry. A quick review of the figures that were introduced in Chapter Two:

- the number of BSL-4 labs has grown from five before 2001 to an estimated fifteen by 2012;<sup>195</sup>
- the exact number of labs that handle BSL-3 level pathogens is unknown but has greatly expanded since 9/11;<sup>196</sup>
- at least 15,000 scientists and technicians work in U.S. BSL-3 and BSL-4 labs.<sup>197</sup>

These steps have all been taken in an attempt to make the United States safer from a biological weapon and to decrease the odds of a successful bioattack. However, it can

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<sup>194</sup> Jane's CBRN Assessments, "Biological Warfare: a Net Assessment," Jane's, under "The NEWS of offensive BW," [https://www.opensource.gov/providers/janes/www8/JDIC/JCBRN/documentView.do?docId=/content1/janesdata/binder/jcbrn/jcbw5007.htm@current&pageSelected=&keyword=&backPath=http://jcbrn.janes.com/JDIC/JCBRN&Prod\\_Name=JCBRN&activeNav=http://www8.janes.com/JDIC/JCBRN](https://www.opensource.gov/providers/janes/www8/JDIC/JCBRN/documentView.do?docId=/content1/janesdata/binder/jcbrn/jcbw5007.htm@current&pageSelected=&keyword=&backPath=http://jcbrn.janes.com/JDIC/JCBRN&Prod_Name=JCBRN&activeNav=http://www8.janes.com/JDIC/JCBRN) (accessed through Opensource.gov on June 11, 2010).

<sup>195</sup> *World at Risk*, 25.

<sup>196</sup> U.S. Health and Human Services, *NIAID IDs and Policy Digest*, 14.

<sup>197</sup> *Ibid.*

be argued that the proliferation of biowapon expertise and technology has made the United States more vulnerable to a biological attack. The logic of defending the United States against a biological weapon by building a massive national biowapon infrastructure is akin to the Cold War logic of keeping the United States safe against a Soviet nuclear attack by building thousands of nuclear warheads. As a result, a reactive build up of nuclear arsenals by the Soviets and Americans produced tens of thousands of nuclear weapons and arguably increased the likelihood of a nuclear war instead of decreased it. Similarly, this bioweapon proliferation could also increase the likelihood of a bioattack.

Additionally, by training thousands of people in bioweapon development, the United States has taken steps to increase the potential lethality of a future bioattack. Before, America's enemies had to discover the ways to build an effective bioweapon on their own through trial and error. The chances of building a perfect weapon that would perform as expected were relatively small. By recruiting a technician from the U.S. biodefense industry, however, the performance is likely to increase and this technician could use the nuances of his expertise to overcome difficulties and reach possibilities that a group had not considered. The end product could then be a weapon that the attacking organization had not even dreamt of.

In a way, this present situation could even be worse than the Cold War nuclear situation. Unlike nuclear weapons, the general population can access dual-use technology to produce a biological weapon. This technology is becoming more accessible as time goes on. A 2001 study showed that the equipment to make dry anthrax is continually becoming cheaper and the risk of unauthorized use of civilian facilities is

constantly growing.<sup>198</sup> To worsen matters, it is difficult to discover and trace missing amounts of pathogens from a lab's stockpile in spite CDC efforts to force labs in the United States register their pathogen stockpiles.<sup>199</sup> Thus, not only could a narco-terrorist organization recruit a bioweapon developer from the biodefense industry, but this recruit could easily acquire the desired biological agents for the organization without anyone ever knowing.

This protection-through-proliferation mentality appears more misguided when considering the FBI's Amerithrax case. At one time or another during the investigation, the primary suspects were biodefense scientists, Stephen Hatfill and Bruce Ivins. In spite of their innocence or inconclusive guilt, the fact that leads kept taking the investigation to biodefense scientists should illustrate the danger of a widespread biodefense industry. Such instances should also demonstrate that these scientists serve as a possible source of developers for narco-terrorists and represent a vulnerability to the national security of the United States. Vastly increasing the numbers of the people in this field increases the chances of hiring people who have the potential and possibly the desire to harm the United States.

To highlight the vulnerability of the expansion of the U.S. biodefense field, the cartel in this scenario will pay for the services of a technician from a BSL-3 facility. The status and activities of a BSL-3 lab are inadequately tracked, especially when compared to the pathogens that it could possibly contain. Present oversight programs rely on lab personnel monitoring themselves and reporting any infractions to government

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<sup>198</sup> Cordesman, *Challenge of Biological Terrorism*, 39.

<sup>199</sup> Jeffrey R. Ryan and Jan F. Glarum, *Biosecurity and Bioterrorism* (Amsterdam: Butterworth-Heinemann, 2008), 215.

agencies.<sup>200</sup> This arrangement allows for a greater likelihood of security breaches and abuses than does the existence of a separate security apparatus that would be responsible for monitoring and reporting of lab activities. The fact that no federal agency is mandated to track the expansion of BSL-3 or 4 labs and that it is nearly impossible to trace the pathogenic inventory of these labs means that future security lapses are bound to happen.<sup>201</sup> Such poor oversight and security would enable cartel members to initiate contact with a lab worker and allow the lab worker to acquire agents and equipment from his lab of employment without the lab's knowledge.

### **Deception and Weapon Development Timeframe**

The cartel's technician would conceive of the bioweapon dispersal method, possibly by traveling to the United States to research different methods and investigate U.S. vulnerabilities. The technician could also acquire the seed stock for the bioagent. Based on previous weapon suitability tests, the technician would choose tularemia, pneumonic plague, and Q fever (all of which can be acquired in a BSL-3 lab). Once the bioagents were acquired, they would be cultured, concentrated, dried, milled, and prepared at the veterinarian clinic. The agents would then be field tested on livestock. The dispersal weapons would then be filled and stored until the attack.<sup>202</sup>

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<sup>200</sup> U.S. Congress, Senate, Committee on the Judiciary, Subcommittee on Terrorism and Homeland Security, *High-Containment Laboratories: National Strategy for Oversight is Needed*, 111 Cong., 1<sup>st</sup> sess., September 22, 2009, 4, <http://www.gao.gov/new.items/d091045t.pdf> (accessed on June 14, 2009).

<sup>201</sup> U.S. Congress, Senate, Committee on the Judiciary, Subcommittee on Terrorism and Homeland Security, *High-Containment Laboratories: National Strategy for Oversight is Needed*, 111 Cong., 1<sup>st</sup> sess., September 22, 2009, 3, <http://www.gao.gov/new.items/d091045t.pdf> (accessed on June 14, 2009).

<sup>202</sup> U.S. Congressional Research Service, *Small-scale Terrorist Attacks*, 15.

The timeframe for the build-up to the attack must be considered. A year, maybe longer, would be needed to insert sources into proper government positions. The cartel would need to select the weapon developer about a year before the attack because it would take that long to find the right front company, assemble a staff with appropriate histories, build an adequate lab, and research and develop the bioweapon. In all, planning and preparation for this attack would require approximately one year.

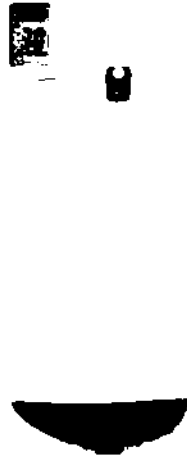
## **THE ATTACK**

Based on his research into dispersal methods, the cartel's bioweapon developer conceived of a way to spread the bioweapon that minimizes exposure of the attackers to the agent, preserves the attackers' and the cartel's anonymity, and does not require the presence of an attacker at the time of the bioweapon dispersal. The developer decided to use automatic air fresheners commonly found in public bathrooms that intermittently spray a mist. The developer discovered how to modify the aerosol refills to hold and disperse the bioagent.<sup>203</sup> Such deodorizers include the Rubbermaid Technical Concepts

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<sup>203</sup> Dispersal method derived from Red Cell Assessment of Biological Attacks on the United States. Conducted at George Mason University's National Center for Biodefense, 2007.

Microburst 3000 Dispenser (an example of which is in Figure 17) and the AutoFresh



**Figure 17. Microburst 3000 Air Freshener Dispenser**

*Source:* Air Delights, “Microburst 3000 Air Freshener & Air Neutralizer,”

<http://www.airdelights.com/microburst-3000-air-freshener.html> (accessed on June 11, 2010).

Select Aerosol Air Neutralizer. These deodorizers have customizable dispensing intervals and durations. A deodorizer that is set to spray every seven minutes for 24 hours per day, seven days per week will last for fifteen days before it needs to be refilled. Meanwhile, a deodorizer that is set to spray every 28 minutes for twelve hours per day, five days per week will last 168 days before it needs to be refilled. Settings in between these extremes are also available.<sup>204</sup>

The attack will be simple: go into the target areas and install the bioagent-loaded refills into the deodorizers then leave. The attackers must ensure that the refill fits the deodorizer. It is highly recommended, but not imperative, that no one observes the perpetrator replacing the refills. The perpetrators can wear janitorial clothing to provide cover in case they are seen changing the refills.

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<sup>204</sup> Air Delights, “Microburst 3000 Aerosol Dispenser, with Proactive Display LCD,” [http://www.airdelights.com/specification/401219\\_MB3000\\_spec\\_sheet.pdf](http://www.airdelights.com/specification/401219_MB3000_spec_sheet.pdf) (accessed on June 11, 2010).

For purposes of OPSEC, the perpetrators who find the strategic locations and install the refill containers will enter the country first without the biological agent. The couriers carrying the aerosol refills will then be sent across the border. To avoid suspicion, each courier and their car will have a clean record and carry four or five refill canisters. The couriers will have no idea what's in the refills and will assume that it's drugs. Therefore, if any couriers are caught, then they will not be able to divulge sensitive plan information. Once across the border, the couriers will meet with the perpetrators and hand off the containers.

The developer prepared thirty refills (ten of pneumonic plague, ten of Q fever, and ten of tularemia) to be placed in strategic locations throughout the United States. Dispersal across the entire country would cause the United States to believe that it is under a comprehensive, large-scale attack. Metropolitan or rural areas are viable targets, as long as the attackers pick buildings with frequently used restrooms. It will be best to pick small bathrooms that are frequently used. When picking an appropriate restroom, the installers must also consider ease of installation and the likelihood of an unobserved installation.

Ideal targets include airports, schools, restaurants, and stadiums. These locations would be easily accessible and able to infect the most people. The attackers would make the most efficient use of their agent and maximize their cost/benefit basis relative to being caught or accomplishing the mission.

The attackers have the potential to cause the most fatalities, damage, and fear by targeting airports. Many people would become infected due to the high traffic of airports.

Since these infections are contagious, people flying to other parts of the world could spread the diseases to other countries.

Targeting schools could also have a cataclysmic effect. Infecting children would scare the public more and put more pressure on the government to stop the attack, including by cutting back involvement in the drug war. Attacks on schools would put people in the position to weigh their stances on the drug war against their children's lives. It is plausible that the children's lives would be considered more valuable.

Restaurants would be the easiest targets. An attacker could visit the restroom and install a bioweapon container while having a meal. If an attacker chose a busy fast food restaurant, then he could walk into a side entrance away from the order counter, go into the restroom, install the canister, and be back out in three minutes.

Stadiums may be the riskiest locations in terms of infecting people and getting caught. Stadiums are ideal targets because, during a sporting event, a high concentration of people is present over a short duration. An attacker would be attracted by the opportunity to infect many people at once. The short duration of the games and the span of days between sporting events, however, will cause much of the bioagent to be sprayed while no one is inside the stadium. Bag checks at the gate and the heightened presence of security throughout the stadium also raise the chances of having a canister confiscated or being caught during installation. Paying a stadium employee or using an insider, however, could circumvent this risk.

At any point throughout the attack, the cartel has the option to remain silent, blame an imaginary group, take credit for attack, or expose the front company to frame



another cartel. The manner of conducting the attack will be decided upon based on motivations, goals, and dynamics of the attack.

As witnessed during the 2001 attack, ignorance about the attacker's identity, motive, demands, and plans amplified the fear. Silence from the attacker added fear of the unknown to the fear of being infected. The cartel could also remain silent throughout the attack. The cartel's silence would let the infections spread, the fear to take hold of the population, and the cartel remain anonymous. If the cartel remains silent, then the attack will be discovered because of the large numbers of infected people. The cause of the outbreak will be initially difficult to attribute to a bioattack. The cause of the outbreaks will probably be more difficult to identify as a bioattack than the 2001 anthrax attacks because there will be no warning such as the threat letters that accompanied the anthrax powder.

Alternatively, once the population's fear of the unknown has stabilized, the perpetrators can correspond with the media over the phone, through e-mail, or through the mail. This action can elicit fear of future events. Correspondence can take place over weeks or months. The perpetrators can provide such information as: identity, demands, motivation, and attack plans. The information can be true or false and can provide varying levels of specificity.

Regarding identity, the perpetrators can provide the names of imaginary groups that have imaginary demands and motivations. Furthermore, the perpetrators can make it appear that the United States is being attacked by several unconnected groups. This illusion would be enhanced by the use of the different bioagents. For example, a false Islamic group could use pneumonic plague, an imaginary al Qaeda cell could use

tularemia, and an invented right-wing militia group could use Q fever. The use of Islamic terrorism ties would take advantage of U.S. beliefs that Middle Eastern terrorist organizations are the front-running non-state threat to launch a biological attack. Such nationwide biases and self-deceptive beliefs would allow the cartel to preserve its anonymity. Additionally, the U.S. government may divert resources from fighting the drug war to hunting those responsible for the attack and preventing a similar future attack. This option, however, is no longer viable once investigators discover that each bioagent was dispersed using the same deodorizer method. It would be implausible that such dissimilar groups would use the same dispersal method.

Regarding attack plans, the perpetrators could spread mass confusion by relaying attack plans that are inconsistent with the attacks or could spread paranoia and fear by accurately forecasting the location of the next attack. To build credibility the perpetrators could even reveal the agent that will be used. That credibility would then make the U.S. public or government more vulnerable to deception, even far-fetched lies, in the future.

The cartel could claim credit for the attack at a point after the attack has unfolded. The cartel boss would only do so when he feels that he can gauge the United States' disposition and predict the U.S. government's reactions to the bioattack. This could intimidate the U.S. population, cause a loss of political will, and a partial withdrawal from the Mexican drug war, or at least a reassessment of U.S. policies towards the Mexican drug war. The threat of additional biological attacks could augment these effects. This action would also increase the cartel's status, display its might, and show its enemies that it should be given a wide berth.

To destroy rivals, the cartel could trigger the D&D contingencies that are in place. Evidence of infections and Mexican intelligence reports would point to the cartel's enemies. U.S. retaliatory actions would then target those enemy organizations. The cartel could even provide support to the United States similar to when the Northern Alliance in Afghanistan supported the United States in destroying the Taliban.

## **CONCLUSION**

The anthrax attacks showed the amount of fear that the act of using a biological weapon can cause. It was not the effects that caused the fear but the act itself and the fear that is already built into one's mind at the threat of being a victim of a biological attack. The tangible effects of the anthrax attacks were minimal: five people dead, seventeen injured, and, besides contamination, no massive physical destruction. Relative to the tangible effects of the 2001 attack, a disproportionate amount of terror was caused.

This scenario aimed to amplify the principles of fear that were revealed by the 2001 attacks. This attack emulated such qualities of the 2001 attack as using multiple phases and retaining the option of limiting communication to make the population fear the unknown by keeping it ignorant about the attacker's identity and motivation and the attack's targets and duration. To generate terror beyond that caused in 2001, this scenario also included the use of different biological agents and outlined a communication plan designed to further panic and confuse the population.

The purpose of this scenario is to illustrate the capability and danger of a Mexican drug cartel. Furthermore, this demonstrates that the United States is extremely vulnerable

to such a simple bioattack. The United States would not only be helpless to prevent such an attack, but would have a difficult time tracking down the perpetrator, especially one that has the resources and knowledge to cover its tracks.

Any Mexican drug cartel could attack the United States for a variety of reasons to accomplish a variety of goals. Within the attack, a cartel could implement different strategies and tactics to wield various weapons. As this scenario reached its culmination, it traveled down specific corridors. Along the way, it passed by alternate corridors of equal likelihood. This scenario is only one path of many in a labyrinth of possibilities that outlines the characteristics of a cartel bioattack on the United States.

The likeliest manner of attack by a cartel on the United States can be argued. What can not be argued is that a cartel is capable of planning and executing every facet of this scenario. Moreover, cartels are only becoming more sophisticated while bioweapons are becoming easier to develop. Thus, as time goes by, scenarios like this one become more plausible.

## **CHAPTER 5**

### **Tracing Trajectories**

#### **INTRODUCTION**

The trajectories of cartel activities are the primary warning signs that the United States may be the target of a biological attack. Specifically, if any cartel is becoming more violent, more desperate, or more sophisticated, then it would become a greater threat to launch a biological weapon. In an attempt to account for possible sources of bioweapon developers inside Mexico, the United States Intelligence Community (USIC) should research any connections between doctors of veterinary medicine (DVM) and the cartels. Furthermore, the United States should be alarmed if any cartel patterns its activities after other organizations that have attempted to launch bioweapon attacks, especially the Aum Shinrikyo cult, which had comparable resources to that of a cartel and had an extended record of attempting to develop and use biological weapons. The United States should also consider whether its own actions will provoke an attack from a cartel. Increased U.S. involvement in the Mexican drug war could motivate a cartel to conduct a biological attack to force the United States to withdraw. Any indications or warnings that the (USIC) acquires leading up to or during a biological attack should undergo counter-D&D analysis since a biological weapon is an ideal weapon to use in coordination with D&D and the amount of corruption and criminal activity in Mexico makes for the perfect environment to stage D&D.

One way to analyze whether an organization is a threat to use a biological weapon is to focus on the obstacles that prevent it from using one. The fewer barriers that prevent an organization from using a bioweapon then the more likely it is to use one. If an organization has no barriers, to include moral and technological, then all it needs is intent. A problem, however, arises when trying to discern whether an organization is no longer constrained from using a biological weapon. When is it apparent that the group crossed the threshold where a biological weapon becomes an option? Where has that line in the sand been drawn, if at all?

### **INCREASED RUTHLESSNESS**

As demonstrated by the numbers of people that they have killed, the Mexican cartels are extremely violent. Indications, such as increased violence against uninvolved civilians and escalating torture and mutilation, show that the cartels are growing more vicious (refer to Chapter Three from pages 74 to 77 for more details). The question, however, becomes are the Mexican cartels ruthless enough to use a biological weapon. A tactic that the cartels have generally avoided is the use of explosives to kill masses of people, such as the use of improvised explosive devices (IEDs) in Iraq. The use of IED-type weapons, especially against civilians, could be a sign that the cartels are moving closer to removing any constraints from using a biological weapon, if they had any before. Conversely, the Japanese cult, Aum Shinrikyo, circumvented the use of

explosives entirely on its way to using chemical and biological weapons.<sup>205</sup> Thus, the use of a biological weapon may not be predicated upon the use of explosives.

The USIC should also be conscientious of activities that would trigger the cartels to become more violent. Increased U.S. involvement in the drug war could cause more violent strikes in Mexico and the United States. This is especially true if increased U.S. involvement results in effective military, intelligence, and law enforcement efforts that are dismantling the cartels or disrupting business. Such efforts could make a desperate cartel leader resort to extreme measures, such as launching a bioattack, to save himself or his cartel.

To gauge a cartel leader's mindset and to determine whether one is potentially ruthless and intelligent enough to use a biological weapon, it could be beneficial to explore what psychological indicators exist. Psychological interviews of cartel bosses that are in U.S. custody could provide insight into the mind of a cartel head and the likelihood of whether one would resort to a biological attack. Indicators could be derived from these interviews that would predict when a cartel leader is becoming hostile, desperate, or ambitious enough to take on the United States by launching a biological attack. This research would be similar to the interviews conducted by the FBI's Behavioral Science Unit of incarcerated serial killers. Such research revealed common psychological motivations and triggers of serial killers and provided the means to predict a serial killer's next step based on his present actions.<sup>206</sup>

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<sup>205</sup> Stratfor, "Al Qaeda and the Threat of Chemical and Biological Weapons," [https://www.opensource.gov/providers/stratfor/www/al\\_qaeda\\_and\\_threat\\_chemical\\_and\\_biological\\_weapons](https://www.opensource.gov/providers/stratfor/www/al_qaeda_and_threat_chemical_and_biological_weapons) (accessed through [www.opensource.gov](http://www.opensource.gov) on June 12, 2010).

<sup>206</sup> Instances of this research can be found in: John Douglas, *Mindhunter* (New York: Pocket Books, 1995).

Other indicators could exist that the United States is the target of a biological attack by a Mexican cartel. An increase in attacks against Americans in Mexico could be one such indicator. Several instances, including the killing of three U.S. Consulate employees stationed in Juarez and a grenade explosion within the U.S. Consulate located in Nuevo Laredo show that Americans have already been targeted.<sup>207</sup> Too little time has passed to determine whether or not these were isolated events or the beginning of a trend. An increase in the number of attacks on Americans and escalating violence should serve as a warning to the USIC and possibly a precursor of things to come. Violence against Americans abroad could lead to cartel violence against Americans within the United States. An increasing number of incidents of small-scale violence on the U.S. side of the border has already caused border state and city governments to call for the national guard and create special police task forces.<sup>208</sup> These incidents, however, have occurred in the course of conducting drug-related business as opposed to violence that targets U.S. citizens. Targeting and killing citizens within the United States because of their U.S. citizenship could indicate that a cartel intends to initiate a larger scale attack.

## **INCREASED SOPHISTICATION**

Determining the level of sophistication required to conduct a biological attack encounters the same problem as determining the required level of ruthlessness. When

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<sup>207</sup> Castillo and Crawford, "3 People Associated with U.S. Consulate Killed;" Booth, "Drug War Violence Appears."

<sup>208</sup> 24-7 Press Release, "Mexican Drug Cartel Violence Spills over Border," <http://www.24-7pressrelease.com/press-release/mexican-drug-cartel-violence-spills-over-border-100729.php> (accessed on June 12, 2010).



does an organization become sophisticated enough to be a threat to use a biological weapon? The Mexican cartels have more capabilities required to launch a biological attack than most other non-state actors. Some might question, however, if the cartels are sophisticated enough to use a biological weapon. In other words, will one of them use its capabilities in a more advanced and strategic way?

The cartels have already shown the ability to evolve and survive under constant law enforcement pressure. That evolution has led to a more sophisticated implementation of technology and weapons. For example, instead of traditionally posting banners in visible areas to convey their messages and warnings, some cartels now communicate with the public through Facebook and Twitter. These modes of communication have been used to aid in kidnappings, terrorize urban population bases, and hunt down enemies, all while more effectively evading law enforcement traps and tripwires.<sup>209</sup> Furthermore, the cartels have shown their ability to adapt their financial and drug trafficking operations to remain successful in the face of more sophisticated law enforcement efforts. Recently, cartels have employed tactics to combat government forces that include blocking highways, busy downtown thoroughfares, and international bridges with stolen vehicles to create congestion and inhibit police and military mobility. Additionally, cartel members have conducted prison raids that required complex planning and logistical arrangements.<sup>210</sup>

The organizational structure of cartels have even adapted to increased government pressure. To become more efficient and resilient, “the cartels are splintering and then

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<sup>209</sup> Alexis Okcowo, “To Battle Cartels, Mexico Weighs Twitter Crackdown,” *Time*, April 14, 2010, <http://www.time.com/time/world/article/0,8599,1981607,00.html> (accessed on June 12, 2010).

<sup>210</sup> Booth, “Drug War Violence Appears.”

rapidly reassembling into increasingly resourceful criminal enterprises, capable of penetrating and corrupting government and society.”<sup>211</sup> U.S. policymakers and USIC members should ask if military pressure is a catalyst that accelerates cartel evolution into more sophisticated entities. Signs of this would include testing new operational techniques, becoming more strategically focused, or developing new tactics.

If the situation dictated that the use of a biological weapon was necessary or beneficial, then the cartels’ capabilities would allow them to make that adaptation. If they are not already sophisticated enough to use a biological weapon, then a continued upward trend of more sophisticated tactics and strategic planning might indicate that a cartel has become advanced enough to coordinate the development and deployment of a biological weapon.

### **VETERINARIANS: BIOWEAPON DEVELOPERS**

Regarding other potential sources of bioweapon scientists, it would be prudent to track the activities of Mexican DVM’s. The scenario in this thesis used a livestock veterinarian clinic as the bioweapon development lab. The knowledge and expertise of a DVM would be very useful when developing and testing a biological weapon. Additionally, U.S. biodefense labs are composed of a large number of DVM’s, which is logical since livestock is a reservoir for many pathogens and is a vulnerable target for a bioterror attack. These facts also make it plausible that many U.S. DVM’s who are not in the biodefense field have received a certain amount of bioterrorism awareness training.

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<sup>211</sup> Fainaru and Booth, “Mexican Cartel’s Swift and Grisly Climb.”

Mexican DVM's may have also held similar biodefense positions and received similar bioterrorism awareness training. As previously mentioned, such proficiency with animals and pathogens would be very valuable to a cartel that wishes to develop a biological weapon. Thus, it would be sensible to search for any affiliations between DVM's and cartels and to discern the nature of any such affiliations.

### **THE AUM SHINRIKYO PRECEDENT**

Indicators of bioweapon development or use should be based on previous steps taken by other organizations that have attempted to acquire, develop, or use a biological weapon. Aum Shinrikyo, the Japanese cult that killed twelve people in a sarin attack on the Tokyo subway system in March 1995, would be one of the most relative organizations to derive possible indicators from since it had financial resources and capabilities comparable to the Mexican cartels.<sup>212</sup> In a testimony after the attack, a high level cult member stated that Aum Shinrikyo's net worth was approximately \$1.5 billion.<sup>213</sup> Additionally, Aum Shinrikyo is relevant towards discerning a cartel's attempt to use a bioweapon because it was extremely sophisticated, and attempted to launch a biological attack several times. Aum Shinrikyo attempted ten chemical attacks and seven biological attacks between 1990 and 1995.<sup>214</sup> If a cartel takes similar steps that Aum

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<sup>212</sup> Kyle B. Olsen, "Aum Shinrikyo: Once and Future Threat?" Center for Disease Control and Prevention, <http://www.cdc.gov/ncidod/EID/vol5no4/olson.htm> (accessed on June 12, 2010).

<sup>213</sup> A. Oppenheimer, "Aum Shinrikyo: Lessons to be Learnt," under "Apocalyptic actions," Janes, [https://www.opensource.gov/providers/janes/search/Search/documentView.do?docId=/content1/janesdata/mags/jtsm/history/jtsm2004/jtsm0283.htm@current&pageSelected=allJanes&keyword=aumshinrikyo&backPath=http://search.janes.com/Search&Prod\\_Name=JTSM&](https://www.opensource.gov/providers/janes/search/Search/documentView.do?docId=/content1/janesdata/mags/jtsm/history/jtsm2004/jtsm0283.htm@current&pageSelected=allJanes&keyword=aumshinrikyo&backPath=http://search.janes.com/Search&Prod_Name=JTSM&) (accessed through www.opensource.gov on June 12, 2010).

Shinrikyo took or starts matching its organizational profile, then intelligence alarms should be sounded.

Aum Shinrikyo's ranks were filled with extremely intelligent and capable people. Aum Shinrikyo employed or recruited people with advanced degrees and positions in fields conducive to making bioweapons, including scientists and engineers.<sup>215</sup> Therefore, an important indicator of a cartel's attempt to produce a biological weapon is the presence of people with advanced biological or chemical degrees or who work in biology labs on the cartel payroll. Furthermore, Aum Shinrikyo unsuccessfully attempted to hire Russian chemical weapons developers in 1994.<sup>216</sup> Reports of any cartel attempting to hire an engineer from any state run biological weapon program should thus serve as an important warning. Cartels may attempt to hide these people or disguise the purpose of their employment. For instance, a cartel may display these scientists as more directly involved with drug production. The implementation of counter-deception analysis would be important in uncovering this type of ruse.

Besides scientists and engineers, a cartel could associate with other illicit organizations that could aid them in acquiring a biological weapon. To build its finances, Aum Shinrikyo designed drugs for the Yakuza, a Japanese mafia group.<sup>217</sup> Such an association was mutually beneficial for each group. A similar criminal/scientific association involving a cartel could be indicative of a cartel's introduction into a field (such as bioweapons) to which it did not have previous access. Once more, counter-

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<sup>214</sup> Stratfor, "Al Qaeda and the Threat."

<sup>215</sup> Ibid.

<sup>216</sup> Oppenheimer, "Aum Shinrikyo: Lessons to be Learnt," under "Apocalyptic actions."

<sup>217</sup> Olsen, "Aum Shinrikyo: Once and Future Threat?"

deception analysis would be needed to realize that this association would not be pertinent to the cartel's drug business. Such questions would need to be asked:

- Is a cartel consulting with terrorists or other criminal groups to learn about new weapons?
- Has a cartel consulted with any bioweapons experts or biologists?
- Has a cartel consulted with anyone who has worked on bioweapons program for another criminal or terrorist organization?

In addition to consorting with various groups and people to acquire a biological weapon, Aum Shinrikyo members also traveled to Zaire to acquire Ebola, a painful, deadly, and contagious hemorrhagic fever virus, from a village that was experiencing an outbreak. A cartel also has the capabilities to monitor similar outbreaks throughout the world for the purpose of harvesting a rare and deadly disease. By screening the news, scientific bulletins, and placing sources in key points, a cartel could stay informed on the latest outbreaks then shuttle members around the world to collect disease samples.

Additionally, a cartel could position sources to gain access to high security biology and biodefense labs. Reports of these activities could show that a cartel is seriously pursuing the acquisition of a biological weapon. Furthermore, the USIC should scrutinize the travelling habits of cartel scientists believed to be involved with drug production.

Unexplained travel destinations or travel patterns could become clear when perceived through the context of acquiring a biological agent. The USIC could then realize that a cartel's drug manufacturing scientist was actually a bioweapon scientist.

Aum Shinrikyo pursued multiple biological agents and attempted to develop multiple weapons.<sup>218</sup> Some of the agents that it cultured and experimented with include anthrax (or what it mistakenly believed to be anthrax), Q fever, cholera, and botulin toxin.<sup>219</sup> In its attempt to perfect a biological weapon, a cartel may also pursue and experiment with different bacteria and viruses. In addition to the previously mentioned acquisition indicators, there could also be culturing and testing indicators. The USIC should have channels open to receive reports of infected livestock and breakouts among human populations in a cartel's territory.

## **D&D INDICATORS**

Several examples have been provided in this chapter that demonstrate the need for counter-deception analysis to strip away the D&D that conceals the real intent of a cartel's actions. Counter-D&D analysis can make random anomalies align to form a coherent picture. It is plausible that a cartel will hide its attempts to acquire, develop, and use a biological weapon. Since it has not been discovered that a cartel has yet attempted to acquire a biological weapon, there is no cartel-specific baseline activity to review that indicates that a cartel is attempting to acquire or use a bioweapon. For the purpose of analysis, it could be useful to assume that a cartel has never acquired or attempted to acquire a biological weapon. Based on this assumption, the USIC can lump all cartel activity as activity unassociated with biological weapons. New activities and practices should be scrutinized and juxtaposed with a cartel's past activities and practices.

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<sup>218</sup> Cordesman, *Challenge of Biological Terrorism*, 15.

<sup>219</sup> Olsen, "Aum Shinrikyo: Once and Future Threat?"

Activities dissimilar to established practices could be further examined and compared to Aum Shinrikyo practices. Anomalies may then be explained and gaps in a cartel's cover story may be revealed. Attempts to conceal a biological agent acquisition or bioattack could be uncovered through this process.

Counter-D&D analysis could also evaluate the sources and channels through which the USIC has received bioweapon information in Mexico. This is especially true when determining attribution for a biological weapon attack. Since the Mexican government is so corrupt, it is important to evaluate the channels from which the United States gets vital information. Counter-D&D analysis could determine the likelihood that a channel, such as a Mexican liaison to a U.S. intelligence agency, is being controlled by a cartel. Further analysis may even show that a cartel is passing false information to keep the United States blind to an impending attack or concealing its involvement in an ongoing attack.

If a cartel is suspected of conducting more advanced and unprecedented deception practices, such as a See-Think-Do scenario, then it is important to discover how it learned such methods. The obvious source would be the Joint Publication 3-13.4, which outlines military deception and can be accessed through the internet. It would be important, however, to investigate connections between a cartel and Mexican military or intelligence personnel who have trained or been a liaison with the U.S. military or USIC. The investigation should determine whether such Mexican government personnel were trained in or learned about military deception and D&D doctrine. The investigation should determine whether these government personnel with D&D training are helping any cartels and imparting their D&D knowledge on the cartel.

## **CONCLUSION**

All of the Mexican cartels are extremely violent and may already be ruthless enough to conduct a biological attack. Each of them has the financial and logistical capabilities to build and deploy a biological weapon. Growing trends in violence and sophistication coupled with an increased threat to their business will only make the cartels more of a threat to use a biological weapon. Other situations in the drug war may arise that make a bioweapon the perfect weapon to use against the United States. Once signs appear that a cartel is a realistic threat to use a biological weapon, its activities should be compared to those of the Aum Shinrikyo cult. If a cartel takes steps that happen to emulate Aum Shinrikyo's patterns related to biological weapons, then that cartel would become a more credible threat to use a biological weapon. By monitoring these characteristics; ruthlessness, sophistication, and similarities to Aum Shinrikyo's activities; the United States is likely to avoid a cartel's surprise bioattack.



## **CHAPTER 6**

### **Crossing the Threshold**

#### **INTRODUCTION**

The 2001 anthrax attack showed many of America's potential enemies that such an attack is possible and that the United States is vulnerable. Many adversaries paid very close attention, the Mexican drug cartels possibly being one of them. Some noted that a simple attack could have devastating consequences. This thesis provides the mechanics of how a potential adversary could plan a biological attack on the United States based on the 2001 attack. Furthermore, this thesis sought to fill certain IC gaps pertaining to biological weapons. This thesis points out that a previous attack on the United States provides utility to U.S. enemies by revealing U.S. weaknesses and responses to a bioattack. These weaknesses, responses, and other effects of the anthrax attacks were cataloged in this thesis. A new perspective was brought to the anthrax attacks by viewing it as a guide that other national security threats can use to attack the United States. In addition to IC gaps concerning bioweapons, this thesis attempted to fill gaps concerning an emerging threat, the Mexican drug cartels. Previous threats have usually included only rogue states, psychotic individuals, and Islamic terrorist groups. The above-mentioned points will be further examined in the findings and results of this final chapter. Policy

recommendations and future thesis topics will then be derived from the findings and results.

## FINDINGS AND RESULTS

In the beginning, this thesis asked *how would a Mexican drug cartel use the 2001 anthrax attack as a proof of concept to conduct a biological attack within the United States to deter law enforcement counterdrug efforts and intimidate rival drug organizations*. This question had a subset of key questions:

- Why would drug cartels use the anthrax attacks as a proof of concept?
- What would the drug cartels learn from the anthrax attack?
- What motivations exist that determine the possibility and method of a cartel using a bioweapon?
- How would a drug cartel conduct a biological attack?

The first question, why would drug cartels use the anthrax attack as a proof of concept, was answered in Chapter Two. There is a bounty of information on the anthrax attack that could be used to tailor a biological attack to fit an organization's needs. After studying the effects, a non-state actor could attempt to duplicate or magnify one or several of the effects. When specifically considering a Mexican drug cartel, the anthrax attack had impacted the United States in many different ways that could be relevant to a cartel's motivations and goals. Chapter Two discussed the relationship between effects and goals by focusing on three specific effects (fatalities and casualties, economic damage, and fear) and analyzing how successfully the anthrax attack created each of

these effects. The chapter then suggested steps that could be taken to duplicate or maximize an effect if it was important to a cartel.

The second key question, what would the drug cartels learn from the anthrax attack, was answered in Chapters Two and Three. Again, by analyzing specific effects of the anthrax attack and relating it to possible goals and motivations of a cartel, this question was answered. These chapters concluded that a cartel could learn from the anthrax attack that a biological attack can be very destructive and customized to fit different situations and accomplish different objectives. Relative to the specific effects that were covered in Chapter Two; fatalities and casualties, economic damage, and fear; the chapter predicted that a cartel would use a different biological agent and delivery method if it wanted to kill and injure a massive amount of people. The chapter concluded that the economic damage caused by the 2001 attack was substantial and a cartel could follow the steps of the attack closely to duplicate the effect. It was determined that fear was a complicated effect. Overall, a cartel could see that little fear was created by the anthrax attack. It could be argued, however, that a large degree of fear was created by an attack that caused so few deaths, injuries, and physical damage. A cartel could conclude that a bioattack may not need to produce a large tangible impact in order to generate a level of fear that could change national policies.

Chapters Three and Four answered the third question, what motivations exist that determine the possibility and method of a cartel using a bioweapon. Implicit in the question is, “who are the drug cartels?” These two questions were answered by reviewing the specific Mexican cartels, cataloging the challenges that they face, determining what their purpose, goals, and objectives are, and analyzing their methods

for overcoming their challenges and accomplishing their goals. It was determined that the cartels use escalating levels of violence to accomplish their goals, which generally revolve around making money. Furthermore, the cartels are coming under an increasing amount of pressure from each other and the Mexican and U.S. governments. It is plausible that a cartel could assess its situation and conclude that a diverse and potentially violent tool like a biological weapon could solve many of its problems.

Chapter Four answered the final question, how would a drug cartel conduct a biological attack, by using a scenario. The scenario picked a potential goal (to increase its standing and improve the environment for the drug trade), a potential target (the United States), and a desired effect (fear). Based on these factors and the ease of bioweapon production, a cartel bioweapon designer picked three suitable biological agents: pneumonic plague, Q fever, and tularemia. The scenario demonstrated that a simple attack could affect many civilians, confuse the public and national policy makers, preserve the cartel's anonymity if desired, and affect national policy.

By answering these key questions, the main research question was answered. This thesis showed how a drug cartel could use the lessons learned from the 2001 anthrax attack to conduct a bioattack against the United States to accomplish its goals.

This thesis went on to hypothesize that ***a threat assessment analysis could illustrate that Mexican narco-terrorists are an emerging danger to use a biological weapon to further their own agendas. Such an analysis, informed by lessons learned from the 2001 anthrax attack, can reveal indicators and warnings of their capabilities and preparations to conduct a biological attack.*** This thesis builds an argument that Mexican drug cartels are an emerging and viable threat to launch a biological attack

against the United States. Furthermore, a cartel could use lessons learned from the 2001 anthrax attack to launch an attack that creates the desired effects and fulfills its goals.

Each chapter was a building block of this argument.

- Chapter Two illustrated that effects of the attack could be studied and that an attack built for a specific purpose could be derived from the anthrax attack.
- Chapter Three illustrated that the cartels are qualified to launch a bioattack on the United States and that motivations exist for a cartel to launch an attack. These qualifications include the financial and logistical capabilities and the ruthlessness needed to conduct an attack.
- Chapter Four built an attack scenario to demonstrate that a bioattack is possible. It provided one possibility out of many of how an attack could occur.
- From these chapters, indications and warnings were developed in the Chapter Five to predict when and how a cartel would conduct a biological attack.

Based on the answers to the research question and the hypothesis, this thesis found that the Mexican drug cartels are a present danger to launch a bioweapon strike against the United States. If the trajectories of violence and sophistication continue upward, then this threat will only grow. Additionally, if U.S. involvement in the drug war increases, then the United States will become a bigger target for two reasons. First, effective U.S. counterdrug policies may put more pressure on the cartels, forcing one of them to take drastic actions to offset successful government efforts. It is plausible that such a severe tactic as a bioattack could be used since the United States is such a formidable foe. Secondly, it has been demonstrated that effective law enforcement

practices might actually accelerate the evolution of these cartels.<sup>220</sup> What might now be a read-and-react group that causes strategic ripples through an aggregate of operational and tactical actions could become an efficient corporation with strategic-minded leaders who can alter national policy with one blow.

The findings of this thesis indicate that a bioattack by a Mexican cartel should be taken more seriously. Most of the policymakers and USIC are concerned with a biological strike by Islamic terrorists, especially Al Qaeda. However, compared to Al Qaeda, the Mexican cartels are wealthier and have better access to the United States with a closer and more robust base of operations. Additionally, the cartels and Al Qaeda are under a relatively equal amount of pressure. This means that the cartels and Al Qaeda should have an equal amount of motive and opportunity to attack. Yet, Al Qaeda is considered a much more dangerous threat to U.S. national security. Such a focus on established threats leaves the United States vulnerable to the next threat that is just over the horizon.

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<sup>220</sup> Fainaru and Booth, "Mexican Cartel's Swift and Grisly Climb," under paragraph five.

## POLICY RECOMMENDATIONS

Several policy recommendations can be derived from the findings of this thesis. These recommendations span the topic spectrum of this thesis, from the drug cartels, to a potential bioattack. The following recommendations are designed to bolster U.S. national security against a bioattack and to prevent a surprise attack from a drug cartel.

- The Commission on the Prevention of WMD Proliferation and Terrorism believes that, since biotechnology knowledge and equipment is becoming more prevalent, a biological attack will occur by 2013.<sup>221</sup> The combination of lower barriers to biotechnology and increased sophistication of drug cartels makes a bioattack by a cartel plausible. This, combined with the escalation of the Mexican conflict and a potential increase in U.S. involvement, could cause a cartel bioattack on the United States in an even shorter period of time. A bioattack threat assessment based on capabilities and resources should be conducted at an agency level. Two likely agencies would include the Department of Homeland Security and FBI. In addition, the Commission on the Prevention of WMD Proliferation and Terrorism has recommended that, in order to reduce the proliferation of dangerous biotechnology,
  1. a review of the program to secure dangerous pathogens should be conducted;<sup>222</sup>
  2. a national strategy to advance bioforensic capabilities should be adopted;<sup>223</sup>

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<sup>221</sup> *World at Risk*, xvi.

<sup>222</sup> *Ibid.*, 27-28.

3. oversight of the high containment (BSL-3 and BSL-4) labs should be intensified.<sup>224</sup>

Additionally, based on its research of the present condition of high containment labs, the GAO has recommended that the National Security Advisor meet with the Secretaries of Health and Human Services, Defense, Agriculture, Homeland Security, the National Intelligence Council, and other appropriate agency heads to select a single agency responsible for the oversight, planning, and evaluation of biodefense lab operations and expansion.<sup>225</sup> The GAO also concurs with the Commission on the Prevention of WMD Proliferation and Terrorism on the need to review and improve controls for pathogenic inventories.<sup>226</sup> These actions could help prevent future abuses by insiders and limit the possibilities of non-state actors recruiting biodefense scientists for their expertise or access to biological agents.

- A strike could come from anywhere. Preventing every potential attack from every enemy is impossible. Building defenses against single biological agents, such as anthrax, an agent previously used against the United States, to prevent from being attacked by it again, is costly and ineffective against the next biological agent to be used. The reactive effort with anthrax is a narrow solution

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<sup>223</sup> *World at Risk*, 27-28.

<sup>224</sup> *Ibid.*

<sup>225</sup> U.S. Congress, Senate, Committee on the Judiciary, Subcommittee on Terrorism and Homeland Security, *High-Containment Laboratories: National Strategy for Oversight is Needed*, 111 Cong., 1<sup>st</sup> sess., September 22, 2009, 5, <http://www.gao.gov/new.items/d091045t.pdf> (accessed on June 14, 2009).

<sup>226</sup> *Ibid.*, 6.



that used too many resources. Dedicated resources to prevent attacks from specific agents could bankrupt the United States, while still remaining vulnerable to a biological attack. A more generalized effort to mitigate the effects of an infection by improving public health response capabilities should become the focus. Such an approach would be cheaper and more effective against a wider variety of biological agents. This approach would consist of increasing the mass-casualty capacity of hospitals and first responders, increasing vaccine production and distribution, and improving workforce preparedness.<sup>227</sup> The Commission on the Prevention of WMD Proliferation and Terrorism also endorsed a similar approach that would increase the U.S. capability to respond rapidly to a bioattack to mitigate the effects of infection.<sup>228</sup>

- Understand that American actions impact the course of the drug war. In a general sense, the United States and Mexico are linked through cause and effect. More specifically, American drug consumption and lax U.S. firearm laws have fueled the Mexican drug war and augmented the cartels' wealth and power. Although the exact number is unknown, the Mexican drug cartels get thousands of their firearms from the United States.<sup>229</sup> In 2007 alone, approximately 1,112 guns that were submitted for tracing from Mexico to the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) originated in Texas, Arizona and California.<sup>230</sup>

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<sup>227</sup> Johnstone, *Bioterror*, 165.

<sup>228</sup> *World at Risk*, 27-28.

<sup>229</sup> Factcheck.org, "Counting Mexico's Guns," The Annenberg Public Policy Center of the University of Pennsylvania, <http://www.factcheck.org/2009/04/counting-mexicos-guns/> (accessed on June 13, 2010).

Weapons that are submitted for tracing represent only a small fraction of weapons that are recovered, which represents only a small fraction of weapons used.

Additionally, Americans get 90% of their cocaine shipped to them via the drug cartels' routes.<sup>231</sup> The United States government must realize that Americans have played a role in this conflict. If politicians do not independently acknowledge this fact and enact defensive policies to prevent the war from bursting across the border and proactive policies that attack the root causes of the conflict, then something as devastating as a mass casualty biological attack may force the United States to realize its place in the drug war.

- A concerted effort must be made to quickly end this war and eliminate the cartels before it devolves further and is fought within U.S. borders. Fighting the war as is presently done allows the cartels to use sanctuaries within Mexico and keeps the cartels outside the effective reach of the full gamut of U.S. law enforcement and intelligence capabilities. These cartels can not be allowed to grow in sophistication and viciousness. Such an allowance would make it harder to eliminate them and raise the cost in lives and resources required to do so. A more dire commitment to lose lives may be needed to resolve this problem if the cartels develop striking capabilities with a biological weapon. Additionally, the United States may not be able to react once it has already been attacked with a bioweapon. A comprehensive offensive involving members from U.S. law

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<sup>230</sup> U.S. Congress, House of Representatives, Committee on Foreign Affairs, Subcommittee on the Western Hemisphere, *Statement of William Hoover, Assistant Director for Field Operations Bureau of Alcohol, Tobacco, Firearms and Explosives Before the United States House of Representatives Committee on Foreign Affairs Subcommittee on the Western Hemisphere*, 110 Cong., 2<sup>nd</sup> sess., February 7, 2008, <http://www.atf.gov/press/releases/2008/02/020708-testimony-atf-ad-hoover-sw-border.html> (accessed on June 13, 2010).

<sup>231</sup> Fainaru and Booth, "As Mexico Battles Cartels."

enforcement, intelligence, and even the military operating within Mexico may be the only way to prevent the cartels from developing such capabilities. In addition to the current efforts to infiltrate and disrupt the cartel organizations and activities, these U.S. government elements would directly confront cartel forces. Such an offensive should focus on tearing down any cartel strongholds within Mexico, eliminating the cartels' ability to manipulate Mexican society for their benefit, demolishing the societal structures that support the cartels, and ultimately destroying the cartels.

- While legislation should be passed that attempts to stop the drug war, policy makers should beware of increased military, intelligence, and law enforcement involvement in the drug war. Greater involvement of course risks the lives of those directly engaged but may also cause a cartel leader to seek retribution by attacking the U.S. civilian base. Increased U.S. dedication to the conflict should be accompanied by increased border security and monitoring of cartel activity within Mexico and the United States. Monitoring cartel activity includes penetrating these organizations and placing sources at every level. The United States and Mexico should also develop joint operations that observe and sensitize incarcerated cartel members, especially former bosses, in U.S. and Mexican prisons. Attention should be paid to the cartels' motivations and habits. A break from established habits may indicate that a cartel has metamorphosized into a different type of organization or that its capabilities have reached a new level. Such transformations might be accompanied by a shift in goals and outlook that could be more dangerous to the United States.

- Work to reduce corruption in Mexico. Government corruption gives a cartel control over official liaison and reporting channels to the United States. These corrupted channels allow a cartel to send inaccurate information that confuses and misguides U.S. policy.

## **FUTURE RESEARCH TOPICS**

This thesis answers a very narrowly defined research question, with a specific threat that implements a precise attack plan that uses certain biological agents. Two subjects, biological weapons and Mexican drug cartels, converged in this thesis. There are many other topics related to this thesis that would add value to the subject matter. The following future research topics are suggested:

- Smuggling WMD through Latino gang networks
- The cyber-attack threat posed by Mexican drug cartels
- The threat posed to the United States by a Mexican drug cartel/Islamic terrorist organization (specifically Hezbollah) alliance
- A biological or chemical attack based on the acquisition, development, and attack patterns of the Japanese cult, Aum Shinrikyo
- The Strategic D&D potential of Mexican drug cartels based on their operational and tactical D&D capabilities
- A vulnerability assessment of the United States relative to specific biological weapons, including a bioattack using multiple biological agents

- The plausibility of a rogue state or non-state actor using a genetically modified biological weapon to attack the United States

## FINAL SUMMATION

In summary, this thesis acknowledges that the amount of ruthlessness and sophistication required to conduct a biological attack is a matter of opinion. Several points, however, should be noted. As the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism discussed in *World at Risk*, advances in biotechnology and the proliferation of dual use technology is constantly making the potential development of a biological weapon less difficult. As a result, a biological weapon is becoming an option for more of America's enemies. As the barriers to developing a biological weapon are becoming lower, the level of the Mexican cartels' sophistication and ruthlessness is trending higher. At some point these trajectories will intersect, if they have not already. All that will be left is a reason to use a bioweapon. Which introduces a third trajectory into this picture: U.S. involvement in the drug war. As the United States becomes more involved in the drug war, the likelihood of a cartel attacking the United States grows. Decreased difficulty in bioweapon development, combined with increased sophistication and viciousness of the cartels, combined with increased U.S. involvement in the Mexican drug war suggests that a cartel will eventually cross that threshold of attacking the United States with a biological weapon.

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