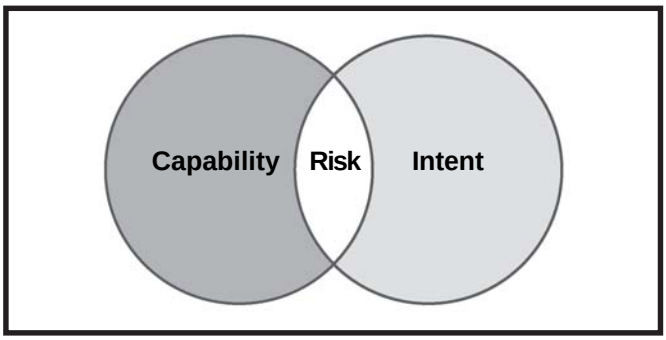
Confronting the Terrorist Dilemma

By Major Ian McCulloh and Second Lieutenant Tony Benedosso

For many people, it is the most frightening scenario imaginable—a terrorist, with scientific know-how, who obtains and releases a highly pathogenic or contagious disease, creating a biological disaster with thousands of victims. But to most people, the possibility of such an attack seems unlikely. As such, the Chemical Corps finds itself in the unfortunate position of validating its existence and justifying that it remains a relevant part of the U.S. military. With this thought in mind, this article will focus on addressing three central questions pertaining to the possibility of a biological attack: Why hasn't there been an attack yet? Will an attack occur? What recommendations are proposed by scientists and biological experts?[1] These recommendations were designed to help the United States prevent a biological attack and to cope with an attack if one occurs.

There are several reasons why there have not been massive biological attacks on the United States. The two essential components needed to organize an attack—capability and intent—can be best explained by showing the elements on a Venn diagram. In order for a biological attack to be successfully carried out, terrorists must possess both of these essential components. To clarify, they must be capable of doing harm and possess an intent that will motivate them to kill many innocent people. When terrorists possess the elements of capability and intent, an intersection of risk is formed (see figure).

There are undoubtedly many terrorists who possess one component but not the other. Certainly, there is not a shortage of people who wish to do harm to the United States. Al-Qaida has demonstrated its intent to inflict as many casualties as possible. Its members would likely use biological agents if they could acquire, weaponize, and deliver them. However, they have not demonstrated the capability to successfully manufacture, weaponize, or employ biological agents. A good example of terrorism is the Japanese cult Aum Shinrikyo. In 1993, the cult attempted to release anthrax spores in Tokyo.[2] Fortunately, they did not correctly weaponize the pathogenic agent. The attack was unsuccessful and resulted in no casualties. In 1995, the cult used sarin gas in the confined space of the Tokyo subway system. This attack resulted in 300 to 400 injuries and 12 deaths. Had the cult understood the effects of weather, among other things, on weaponized agents, their attack might have resulted in a more devastating outcome.



Venn diagram showing intersection of risk

One possible reason for the lack of biologically astute terrorists is the belief of Islamic extremists that biology is a rudimentary and crude form of science.[3] Even those individuals who possess an evil intent and an elementary understanding of science have found that the capability gap is often too much to jump without the expert knowledge of biological agents. Conversely, there are many scientists and laboratory technicians in the United States who do possess the capability to weaponize deadly biological agents.[4] However, as a reporter from *Wired* magazine recently reported, these professionals seem to have a professional ethic that prohibits the misuse of their knowledge.[5]

It is impossible to predict with absolute certainty where, when, or if the United States will fall victim to a massive biological attack. However, one thing is certain—the once sizeable gap between capability and intent is getting smaller and smaller. While the previous gap has given the United States a head start in planning for a disaster, there is strong evidence to suggest that this disparity will one day be overcome. The United States will likely deal with a malicious group which possesses both the ability and the intent to cause a biological disaster. Just because an attack has not happened before, does not mean that one will not occur in the future.

One of the problems that the United States is facing is the comprehensive strategy of dealing with a biological attack. Recently, Mr. Bill Patrick, former chief of U.S.

biological-weapons production, criticized the government's biological-defense spending of billions of dollars on a high-tech sniffing device to be used only by the U.S. Postal Service.[6] The former chief states that the Postal Service is not a good target for a skilled terrorist to consider attacking, as there are not many people in one location to be harmed. This is an example of the U.S. government fighting the "last war" rather than preparing for new ones. Many of the defense institutes are understandably struggling to successfully develop and integrate bioterrorism education, preparedness, and response plans. The average Chemical officer—who ostensibly is responsible for dealing with the nonmedical aspects of a biological contingency—must be prepared to deal with the many possibilities he may face in a biological attack. And civilian authorities and hospitals must be prepared to deal with a massive biological emergency. The response plans and defensive strategies of the United States cannot be vulnerable to an individual or an organization that possesses both the capability and the evil intent.

It stands to reason that as the gap between capability and intent closes, someone will have enough resources and ill will to facilitate an attack on the United States. The question is: How can we improve our defenses and response plans? Current U.S. defensive countermeasures are based around sensors placed in larger cities, stockpiles of drugs, and a handful of traditional vaccines. These measures are essentially fixed defenses against only the well-known biological threats. While these defenses would be effective in counteracting some attacks, Dr. Roger Brent, President of the Molecular Sciences Institute, believes strongly that a large shift in policy and philosophy is needed.[7] He feels that the United States should move away from fixed defenses and toward a systems approach that employs the best tools of the biotechnological revolution. A terrorist group using biological weapons shares certain strategic advantages with all terrorists. Most importantly, it only needs to find one vulnerability to exploit, while the target population must defend against all possible attacks. Dr. Brent suggests that instead of engaging in an unwinnable cycle of defensive preparation against specific biological threats, the United States should build a flexible program "complemented by flexible detections of new threats and agile responses to them." A good example of focusing resources on flexibility is *BioWar*, a city level multiagent simulation developed by Dr. Kathleen M. Carley at Carnegie Mellon University. BioWar allows analysts to evaluate human responses to potential biological and chemical threats and build robust defenses.[8] Yale University maintains a state-of-the-art database that contains "scientific evidence about how animal disease events can be an early warning system for emerging human diseases."[9] Likewise, the University of Louisville received a $22 million federal grant to "develop new vaccines to fight emerging infectious diseases."[10] These programs are welcome steps in the right direction. They underlie the fact that the government must continue to think of new ways to approach the dilemma surrounding the threat of biological terrorism.

These suggestions are fairly general, but they display an important idea: We cannot afford to fight the wars of the past. The ultimate goal is for the United States to one day move away from fixed strategic defenses. It must move toward a more flexible and agile integrated response. This response plan must show the capabilities required to defend against the future threats of advanced biotechnological capabilities. The United States has been fortunate not to have been victimized by a massive biological attack, but we cannot discount the possibility that such an attack could occur. Thus, as members of the Chemical Corps, it is up to us to lead the way and create a broader philosophy about biological defense and biological education.

References:

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[4]ibid.

[5]Rob Carlson, "Splice It Yourself," *Wired* magazine, May 2005, *<http://www.wired.com/wired/archive/13.05/view.html?pg=2>*, accessed on 29 March 2006.

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