The Threat of Hezbollah and the Islamic State Obtaining Chemical Weapons

by

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Abstract

Syria’s ongoing civil war, though intractable and destabilizing in itself, has raised concerns in the U.S. and Israel that terrorist groups may capitalize on the chaos to obtain chemical weapons or the technology to produce them. The concern that Hezbollah or the Islamic State obtains large-scale chemical weapons and the technology to develop chemical weapons is a dominant issue for Israel and the U.S. There are previous accounts of terrorist groups using chemical weapons, but all accounts are in the form of homemade chemical bombs. These chemical bombs usually took the form of car bombs with chlorine tanks or weaponized pesticides. While chemical weapons of this kind have undoubtedly shifted the balance of power on the battlefield, this study is primarily concerned with military grade chemical weapons and the potential for Hezbollah and Islamic State to acquire them. Hezbollah and the Islamic State are likely to pose a viable chemical weapon threat in the future to the U.S. and its allies.

Keywords: Syria, chemical weapons, Islamic State, ISIL, ISIS, Hezbollah
Dedication

I dedicate my work to my family and those who have fought for freedom. A special thanks to my wife for your love and support in everything I do. To my mother, your continued love has contributed greatly to my success. To my father, your love and guidance will always remain with me. I would not be who I am today without the support of my family. To those that have fought for freedom, let us never forget the cost of freedom.
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List of Terms, Abbreviations, or Symbols

Al Qaeda in Iraq (AQI)

Bundesnachrichtendienst (BND)

Chemical Weapons (CW)

Global Terrorism Database (GTD)

Iranian Revolutionary Guard Corps (IRGC)

Islamic State of Iraq and Syria (ISIS)

Islamic State of Iraq and the Levant (ISIL)

Jama’at al-Tawhid wa’al-Jihad (JTJ)

National Defense Forces (NDF)

North Atlantic Treaty Organization (NATO)

Organization for the Prohibition of Chemical Weapons (OPCW)

Syrian Arab Army (SAA)

The Chemical Weapons Convention (CWC)

U.S. Department of State (DoS)

United Nations (U.N.)

Weapons of mass destruction (WMD)
Chapter 1: Introduction

Syria’s ongoing civil war, though intractable and destabilizing in itself, has raised concerns in the U.S. and Israel that terrorist groups may capitalize on the chaos to obtain chemical weapons or the technology to produce them. The concern that Hezbollah or the Islamic State obtains large-scale chemical weapons and the technology to develop chemical weapons is a dominant issue for Israel and the U.S. There are previous accounts of terrorist groups using chemical weapons, but all accounts are in the form of homemade chemical bombs. These chemical bombs usually took the form of car bombs with chlorine tanks or weaponized pesticides. While chemical weapons of this kind have undoubtedly shifted the balance of power on the battlefield, this study is primarily concerned with military grade chemical weapons and the potential for Hezbollah and Islamic State to acquire them. Hezbollah and the Islamic State are likely to pose a viable chemical weapon threat in the future to the U.S. and its allies.

The conflict is now reaching its fifth year, and two years have passed since the first open source report of a chemical weapon attack. There is ongoing concern over the stability of the Syrian government and the concern if the government declared all of its chemical weapons. The introduction of Hezbollah and the Islamic State into the equation further complicates all issues, not to mention the many other groups that are involved in both sides of the conflict.

Purpose of the Study

This thesis addresses the regional and strategic implications of Hezbollah or the Islamic State obtaining a chemical weapon or the capability to produce chemical weapons. The dynamics of the situation in the Syrian Civil War have shifted and expanded in many ways since the start of this research in 2013. More details have emerged of the support for the Bashar al-
Assad regime as well as the opposition forces. The Syrian conflict is complex, and this thesis will discuss this briefly to provide context, it is not the focus of this thesis. This research seeks to answer the following hypothesis.

1. Hezbollah and the Islamic State will present a chemical weapons threat in the near future based off their ideologies and the instability in Syria and Iraq.

The literature review examines the use of chemical weapons in Syria and the progress of the chemical disarmament by Syria. This provides insight on the two terrorist organizations’ ability to obtain a chemical weapon capability. Access to chemical weapons or the technical capability to produce military grade chemical weapons defines the ability of either organization to obtain this capability. A detailed review of Hezbollah’s and the Islamic State’s current goals and ideology will likely yield if their intent to obtain chemical weapons. The background information within this introduction provides a knowledge base to help understand and frame the problem statement.

Background of the Syrian Civil War

The Syrian Civil War began in March 2011 with an uprising initially focused on small-scale and isolated grievances directed at the government (Dalacoura, 2013). Protests began in January 2011 in the capital city and spread around the country. The initial protests drew inspiration from the Arab Spring, which in other countries had become a powerful force for political freedom and economic modernization. This message quickly spread across the region by television, internet, and social media. The protests were generally peaceful, but by mid-March the Syrian government began to respond with increasing violence that led to additional protests across the country (Diehl, 2012). The government’s disproportionate use of violence,
intended to suppress dissent, had exactly the opposite effect, and engendered fierce and often violent sentiment against the regime.

The Syrian Civil War’s complexity continues to develop, with multiple foreign players on both sides of the conflict. On one side are the Assad regime and the pro-Assad forces. The Syrian Arab Army (SAA), Assad’s primary military force, receives crucial supplies, funding, and experienced fighters from several foreign powers, including Iran, Hezbollah, and Russia, despite protests from the United States and other Western powers. Syrian security officials also acknowledged the formation of the National Defense Forces (NDF) in early 2013. This new force, which according to some estimates is comprised of between 60,000 and 100,000 fighters, would not be successful without the help of Iranian Revolutionary Guard Corps (IRGC) and Hezbollah instructors, who provided vital training in urban guerilla warfare (Kozak, 2015). In addition, estimates range from 7,000 to 8,000 foreign fighters from Iranian proxy groups and between 2,000 and 5,000 Iraqi Shia fighters supporting the Assad regime. The conflict has continued to escalate with the Assad regime employing forms of chemical weapons against opposition-held territories.

The opposition groups are even more complicated than the pro-Assad side of the conflict. A report by the Congressional Research Service from September 2014 titled *Armed Conflict in Syria: Overview and U.S. Response*, summarizes the composition and complexity of the anti-government forces:

Islamist militias seeking to enforce varying degrees of what they recognize as Sunni Islamic law in Syrian society—among them members of the Islamic Front (see below), the Islamic State, and Jabhat al Nusra (the Support Front)—have marginalized other
armed groups, including some that received U.S. nonlethal assistance. Earlier this year, U.S. intelligence community leaders identified the approximately 26,000 members of the Islamic State, Jabhat al Nusra, and Ahrar al Sham (Freemen of the Levant, a key component of the Islamic Front) both as extremists and as the most effective opposition forces in the field. On September 3, National Counterterrorism Center Director Matthew Olsen stated that as many as 12,000 foreign fighters have travelled to Syria, including more than 1,000 Europeans, and more than 100 U.S. citizens. Previous U.S. government assessments suggest that these fighters hail from more than 50 countries and that among them are Al Qaeda-linked veterans of previous conflicts. (Blanchard, Humud, & Nikitin, 2014)

James Clapper, the Director of National Intelligence, stated at a Senate Armed Services Committee in February 2014 that the estimated size of the insurgency in Syria is up to 115,000 insurgents, organized into at least 1,500 groups, with widely varying political leanings (Blanchard, Humud, & Nikitin, 2014). The U.S. government identified two main groups of concern as the Jabhat al Nusra and the Islamic State (Blanchard, Humud, & Nikitin, 2014). Jabhat al Nusra is the Al Qaeda element operating in Syria.

This background provides only a small glimpse into the political complexities of the Syrian Civil War, but it should be clear that the U.S. and NATO will be hard pressed to find an effective policy solution or a way to support the “right” actors.
Hezbollah

Hezbollah, or “Party of God”, formed in 1982 during The Lebanese Civil War after Israel conducted a successful invasion and defeat of militias in south Lebanon. As a result, a coalition of Shiite militias came together under heavy influence from Iran, with military and financial assistance from Syria (Evans, 2006). Hezbollah quickly emerged as a dominant organization in the region, conducting kidnappings and assassinations of foreigners, and more importantly to the Lebanese government, preventing Israeli forces from pushing further into Lebanese territory. Their terrorist attacks included bombings of the Beirut and French barracks in October 2013, bombings of the U.S. embassy in September 1974 and April 1983, and several high-profile kidnappings, in total killing over 150 people.

The Taif Agreement, brokered by Syria and Iran, ended the conflict in Lebanon in 1990. Their agreement required all militias to disarm; however, the Lebanese government did not enforce this with Hezbollah based on their ability to keep Israeli forces at bay in the southern part of the country. The U.S. Department of State (DoS) designated the group as an Islamist terrorist organization in October 1997 (Evans, 2006). Hezbollah’s political wing plays an important role in Lebanon’s democratically elected coalition government, providing support to hospitals, schools, and various media outlets.

As previously mentioned, Hezbollah provides support to pro-Assad forces in the form of training and, according to an estimate by a senior Israeli military official, about 4,000 to 5,000 fighters. In May of 2013, Hezbollah Secretary General Hassan Nasrallah publicly acknowledged Hezbollah’s involvement in Syria (Blanchard, Humud, & Nikitin, 2014).
The Islamic State

The Islamic State, also known as the Islamic State of Iraq and Syria (ISIS), the Islamic State of Iraq and the Levant (ISIL), or by the Arabic acronym Da’ish, seeks to establish and expand a caliphate. They currently operate in Iraq and Syria and control several towns and lines of communication in both countries. Their history dates back to 2002 when they were under the control of Abu Musab al-Zarqawi, a radicalized Jordanian. His control of the organization spanned from 2002 to 2006 and the U.S. State Department recognized the organization’s name as Jama’at al-Tawhid wa’al-Jihad (JTJ) until 2004 when the group joined Al Qaeda and became Al Qaeda in Iraq (AQI).

An American airstrike killed Zarqawi in 2006. Abu Ayub al-Masri, an Egyptian bomb maker, took control of AQI and led the organization through a period of decline from 2006 to 2011. A number of factors contributed to the decline of AQI. First, the foreign presence in the leadership became an issue for many Iraqi Sunnis. AQI received criticism on the use of extreme violence and harsh treatment. Lastly, by 2008, Coalition and local security forces killed upwards of 2,400 members and captured an additional 8,800.

The withdrawal of Coalition forces from Iraq in 2011 proved to break AQI’s decline. The group began to gain steam by taking advantage of the instability of the Iraqi government. In addition, the group began operations in Syria and changed its name to ISIS. Another important fact about the Islamic State is that the current Al Qaeda leadership officially renounced any connection with the group in 2014 and the Islamic State began infighting with other Islamic groups in the region. The group has continued to expand, claiming territory in Iraq and Syria and gaining recruits from around the world.
Chapter 2: Literature Review

Chemical Weapon Use in Syria

In order to address if Hezbollah or the Islamic State pose a viable chemical weapon threat, identifying if the capability still exists in the region, specifically Syria, is critical. In addition, defining and understanding a chemical weapon and the background on the prohibition of chemical weapons use in war provides valuable insight on the history if its destruction.

The Chemical Weapons Convention (CWC), enacted in 1997, is a multilateral arms control and nonproliferation treaty, which prohibits the development, production, stockpiling, and use of chemical weapons (The United States Chemical Weapons Convention, 2015). The Organization for the Prohibition of Chemical Weapons (OPCW) administers the CWC and seeks to enforce the goals and end state of the CWC. The OPCW provides the following definition of chemical weapons:

To preclude contravention of the treaty’s intent by separation of chemical weapons into component parts, the Convention defines each component of a chemical weapon (CW) as a chemical weapon—whether assembled or not, stored together or separately. Anything specifically designed or intended for use in direct connection with the release of a chemical agent to cause death or harm is itself a chemical weapon. Specifically, the definition is divided into three parts: toxic chemicals and their precursors, munitions or devices and equipment ‘directly in connection’ with munitions and devices (Organization for the Prohibition of Chemical Weapons, 2014).

Chemical weapons are a recognized category as a weapon of mass destruction. Weapons of mass destruction (WMD) are weapons with the capacity to destroy large amounts of life and property in a single attack (Betts, 2002). It is important to note that the term “weapons of mass
destruction” is ambiguous and has been since the term’s first use in the 1940’s. The United Nations Commission on Convention Armaments drafted the most accepted definition in 1948. This is also the current definition used by diplomats and in arms treaties. It states that WMD are, “atomic explosive weapons, radioactive material weapons, lethal chemical and biological weapons, and any weapons developed in the future which have characteristics comparable in destructive effect to those of the atomic bomb or other weapons mentioned above (Carus, 2012).” The three most commonly recognized categories of WMD are nuclear, chemical, and biological weapons. Richard Betts suggests the primary targets of WMD are civilian economies and populations; however, history also demonstrates their effectiveness against large and concentrated military formations (Betts, 2002).

The North Atlantic Treaty Organization (NATO) defines a chemical agent as “a chemical substance which is intended for use in military operations to kill, seriously injure or incapacitate people because of its physiological effects (Evison, Hinsley, & Rice, 2002).” They are relatively cheap to produce and used in several conflicts throughout the 20th century. The toxic properties of the specific chemical substances provide the actual benefit of chemical weapons compared to conventional weapons, which use explosives to produce the desired effect. There are three primary types of chemical weapons; nerve agents, blister agents, and choking agents.

Nerve agents, formed in a liquid or a gas, block an enzyme that is required for the functions of the central nervous system. Blister agents, also called vesicants, inflict painful burns and blisters but have a relatively low rate of lethality. Choking agents attack lung tissue, causing significant damage that result in pulmonary edema. There are numerous ways to deliver chemical weapons, including warheads, projectiles, and spray tanks. Weaponizing toxic chemical agents is one of the most important factors in the effectiveness of the agents. Many of
the delivery methods are specific to the types of agents based on their chemical properties (Federation of American Scientists, 2013). Additional considerations of employing chemical weapons are environmental factors such as wind, humidity, and temperature.

Beginning in July 2012, official statements surfaced from various Officials within the Assad regime on the government’s possession of chemical and biological weapons. These statements remained relatively inconsistent throughout the rest of the year on the questions of whether the government possessed chemical weapons at all, and under what circumstances they would utilize them. U.S. government agencies, such as the Department of State and the Office of the Director of National Intelligence, assessed that Syria’s government maintained a chemical weapons program supported by several other countries, including Egypt and Russia (Kerr, Feickert, & Nikitin, 2013).

There is concrete evidence of chemical weapons use inside of Syria. Although it remains unclear who employed them, the history of their use is nevertheless important for this study. The first reports of the use of chemical weapons in Syria were in March of 2013. Prior to this, as early as December 2012, officials from France, Israel, the United Kingdom, and the United States stated there was evidence that the Syrian government used sarin nerve agent against opposition forces within the country (Kerr, Feickert, & Nikitin, 2013). The attack in March 2013 occurred in a city near Aleppo. Both pro-Assad and opposition forces claimed the other side was responsible for the use of chemical weapons against civilians in the village of Khan al-Assal. On three different occasions, additional reports indicated the use of chemical weapons. (Kerr,
The Syrian government asked the United Nations (U.N.) to investigate, asserting that the opposition was responsible for the chemical weapons use.

U.N. investigators were in Syria at the time of the August 21, 2013 attack investigating previous claims of chemical weapon attacks. The U.N. findings, *Report on the Alleged Use of Chemical Weapons in the Ghouta Area of Damascus on 21 August 2013*, provides valuable details derived from multiple eye witnesses, biological samples, and victims. The investigation not only confirmed the use of chemical weapons, but also determined that surface-to-surface rockets delivered the toxic agents. (United Nations, 2013). Although the U.N. report did not indicate the number of fatalities, other reports listed numbers as high as 1,400 to 1,500 (Kerr, Feickert, & Nikitin, 2013) (Entous & Bendavid, MIssion to Purge Syria of Chemical Weapons Comes Up Short, 2015). Lastly, in a later investigation on separate attacks in April of 2014, the U.N. concluded, “with a high degree of confidence, that chlorine, either pure or in mixture, was the toxic chemical in question” (Organisation for the Prohibition of Chemical Weapons, 2015).

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1 A few days after the attack, the Syrian government officially requested the United Nations Secretary General to investigate the allegations that the opposition used chemical weapons near the city of Aleppo (Kerr, Feickert, & Nikitin, 2013).

2 Chlorine is not a schedule 1 or schedule 2 chemical under OPCW and not required to be declared or destroyed in the agreement with Syria. Article I, General Obligations for the OPCW prohibits the use of chlorine as a chemical weapon.
Figure 1: Map produced by the U.S. Government on the areas affected by the 21 August Chemical Attack (Kelley, 2013).

**Chemical Weapons Disarmament Agreement**

Despite no one claiming responsibility for the attack, and a lack of conclusive evidence either way, political pressures convinced the Assad regime to agree to a disarmament agreement in September 2013. As part of this agreement, Syria declared the amount of chemical weapons held in their possession and their production and storage facilities and agreed to the removal and destruction of both the weapons and facilities. Over the course of the following year, the removal and destruction of approximately 1,328 metric tons of Syria’s declared chemical weapons was underway.
Over the approximately twelve months that it took to remove the declared chemical weapons, serious concerns over the security of the production and storage sites arose, as well as concerns of the ability for the Syrian government to meet the deadlines. The OPCW team was often limited in which sites they could inspect due to security concerns in the sites across the country. They were often at the hands of the Syrian government in which locations they could inspect.

Under the OPCW agreement with Syria, the declaration of chlorine was not mandated (Blanchard, Humud, & Nikitin, 2014). This is an important aspect of the agreement and the situation in Syria. Various commercial products utilize chlorine and thus are not part of the schedule of prohibited chemicals. However, the CWC prohibits any chemical intended for chemical weapons purposes regardless if the chemical is under the schedule of prohibited chemicals (Organisation for the Prohibition of Chemical Weapons, 2015).

The OPCW is still operating a fact finding mission to investigate recent reports of continued use of chemical weapons inside of Syria (Organisation for the Prohibition of Chemical Weapons, 2015). The disarmament of Syria is still an ongoing task supported by the international community, and experts acknowledge the possibility that Syria did not declare all chemical weapons.

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3 The history and availability of chlorine as a chemical weapon dates back to the early 1900s along with several other commercial chemicals historically used as a chemical weapon (Organization for the Prohibition of Chemical Weapons, 2014).
In the wrong hands

There are hundreds of definitions of terrorism, many with nearly indistinguishable meanings, but there are several who seem to contradict each other outright. U.S Code, Title 18, Part I, Chapter 113B, Section 2331 provides an appropriate definition:

(A) involve violent acts or acts dangerous to human life that are a violation of the criminal laws of the United States or of any State, or that would be a criminal violation if committed within the jurisdiction of the United States or of any State;

(B) appear to be intended—

(i) to intimidate or coerce a civilian population;

(ii) to influence the policy of a government by intimidation or coercion; or

(iii) to affect the conduct of a government by mass destruction, assassination, or kidnapping; and

(C) occur primarily outside the territorial jurisdiction of the United States, or transcend national boundaries in terms of the means by which they are accomplished, the persons they appear intended to intimidate or coerce, or the locale in which their perpetrators operate or seek asylum; (U.S. Government, 2012)

In addition, the Central Intelligence Agency (CIA) provides the following information on terrorism:

The Intelligence Community is guided by the definition of terrorism contained in Title 22 of the US Code, Section 2656f(d):
-The term "terrorism" means premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents.

- The term “international terrorism” means terrorism involving the territory or the citizens of more than one country.

- The term “terrorist group” means any group that practices, or has significant subgroups that practice, international terrorism. (Central Intelligence Agency, 2013)

It is necessary to look deeper into the two groups and discuss the groups’ goals and intentions. Portraying this accurately will help to analyze and assess their ideology and end state, helping to determine whether obtaining of a chemical weapon capability is a viable threat.

As previously discussed, Hezbollah is a thirty three year old and seasoned political arm in Lebanon, formed with heavy support from Iran and Syria. Marisa Sullivan in her work for the Middle East Security Report 19 assessed that Hezbollah maintains three objectives for their support for the Syrian Regime. Hezbollah has an interest in helping the Syrian military and ensuring the Axis of Resistance remains intact. Second, Hezbollah aims to keep the lines of communication from Damascus to Lebanon in pro-Assad forces’ hands. These lines of communication are key to Iran’s support to Hezbollah and their foothold in the Levant. Without them, Hezbollah’s support is in jeopardy. Lastly, Hezbollah wants to prevent a Sunni-dominated regime from taking power in Syria if the government should fail (Sullivan, 2014). In light of these goals, Hezbollah’s support for Syria began during the protests in early 2011. Support to

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4 The Axis of Resistance is an Iran-led alliance of state and non-state actors in the Middle East that seeks to confront Western interests in the region, namely those of the United States and Israel. Historically, this alliance has included the Assad regime in Syria and Lebanese Hezbollah. (Sullivan, 2014)
the Assad regime continued to escalate to the point of direct military involvement on behalf of Hezbollah.

Even with their strong involvement with the Syrian government, some evidence indicates Hezbollah was not aware of the intent to use chemical weapons on the August 21, 2013 attack. The reports indicated that German intelligence intercepted a phone call between a high-ranking Hezbollah member and the Iranian embassy. The senior Hezbollah member stated to the Iranians that, “Assad had lost his temper and committed a huge mistake by giving the order for the poison gas use (Schofield, 2013).” In addition, Hezbollah fighters were located in some of the areas hit with chemical weapons (Entous, Malas, & Abushakra, 2013). The Syrian troops in the area reportedly knew of the upcoming attack and told to wear their protective masks (Entous & Bendavid, 2015). Some Hezbollah troops fell ill from the attack but there were no fatalities. Some ambiguities and questions remain from these reports. It remains unclear if the senior Hezbollah member was in contact with high-ranking officials from the Assad regime to dissuade the use of chemical weapons. In addition, communication between Hezbollah and the Assad regime could have cause the friendly fire of the chemical weapons. The evidence does clearly indicate that the senior Hezbollah member understood that employing chemical weapons was a huge mistake.

The goals for the Islamic State are relatively clearly stated but not as detailed as Hezbollah. The leaders of the Islamic State are from AQI and their stated end goal is an established caliphate. The Encyclopædia Britannica defines caliphate as a political-religious state ruled by a caliph comprising the Muslim community and the lands and people under its dominion in the centuries following the death of the Prophet Muhammad (Encyclopædia Britannica, 2015). Some Muslim scholars view this as the earliest and purest form of Islam. The
Islamic State is not a new idea that just recently arose. Muslim leaders as early as the 1900s discussed the reestablishment of the caliphate (Bunzel, 2015). Not until late in the 20th century that the Muslim Brotherhood and Al Qaeda radicalized the ideology. These radical leaders frequently spoke of establishing an Islamic State based on a caliphate (Bunzel, 2015).

The Islamic State has demonstrated that they are surprisingly capable at governing large areas in Syria and Iraq, despite their system of governance enforcing draconian laws, barbaric punishments, and fear (The Week, 2015). The most important aspect of the way they rule, their brutally violent adherence to takfiri doctrine, is ideologically different from Al Qaeda and, indeed, every other terrorist organization. The reports, images, and videos speak for themselves displaying the executions and harsh treatments that the Islamic State hands out. Although here we will not delve into the theological worldview of the Islamic State, Graeme Wood describes in his article What ISIS Really Wants the key doctrine of takfiri: 5

Following takfiri doctrine, the Islamic State is committed to purifying the world by killing vast numbers of people. The lack of objective reporting from its territory makes the true extent of the slaughter unknowable, but social-media posts from the region suggest that individual executions happen more or less continually, and mass executions every few weeks. Muslim “apostates” are the most common victims. Exempted from automatic execution, it appears, are Christians who do not resist their new government. Baghdadi permits them to live, as long as they pay a special tax, known as the jizya, and acknowledge their subjugation. The Koranic authority for this practice is not in dispute (Wood, 2015).

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5 Graeme Wood provides an excellent overview of the beliefs and theology behind the group in his article in The Atlantic titled What ISIS Really Wants (http://www.theatlantic.com/magazine/archive/2015/03/what-isis-really-wants/384980/).
The Islamic State has conquered a swath of territory in eastern Syria and western Iraq. There are chemical weapon production facilities and storage facilities within reach of the span of their control and a few reports that indicate the Islamic State has already taken over an old chemical weapons facility north of Baghdad (Associated Press at the United Nations, 2014). The Iraq government stated that there were 2,500 degraded chemical rockets, which previously contained sarin (Associated Press at the United Nations, 2014). Although no chemicals were present in this facility, if true, it displays that the Islamic State is one-step closer to the capability to produce military grade chemical weapons. This has been and will continue to be a major political issue for
the U.S. and its allies regarding the regional security. The Islamic State’s display of disregard for human life and barbaric tactics states a clear message that if there were to obtain this capability, they would not hesitate to use them to further their goal of establishing a caliphate and continuing to threaten U.S. allies and destabilize the region.

Chapter 3: Methodology

Methods

The issue of chemical weapons is a dominating issue for the international community and has been for the three years. Research into this problem is necessary in order to fully understand the complicated situation and to provide U.S. decision makers with the information they need to develop effective policies to combat these issues. The method for collecting data during this research project was primarily from open source news reports, publications from experts, and publications from official organizations. This thesis examines the threat of Hezbollah or the Islamic State becoming a viable threat as a non-state actor with chemical weapons based on the access to existing stockpiles, production facilities, and technical experts. The second part of this research will attempt to assess the ideology of Hezbollah and the Islamic State to employ chemical weapons to further their goals. This portion of the research will determine if there is any evidence that either group has actually used a chemical weapon in the past or expressed an intent to obtain a chemical weapon. In the context of the complicated conflict that is occurring in Syria and Iraq, this poses significant international implications of known terrorist organizations obtaining this type of capability.
The issues that the thesis faces are the dynamics of the Syrian civil war. The vast amount of daily news reports on the situation requires constant monitoring, but the research will primarily focus on recent proven events and factual historical accounts. In addition, this research does not cite single news reports. Based on the complexity of the situation, the validity of single source reports is hard to determine and it becomes difficult to keep up with the vast amount of single source reports.

**Analysis**

During this research, a case study will present terrorist groups historical use of chemical weapons. Although terrorist groups have had different goals and intentions for using chemical weapons, this is important for this research to determine how the international community reacted to the use. The international community and countries were these attacks occurred need to assess their actions and reactions to these events. When properly analyzed objectively, these events and international responses are key for world leaders to develop future responses to punish those who employ chemical weapons.

During the process of data mining for this research, I assessed sources for their reliability and accuracy. Assessing reports for their reliability and accuracy is difficult and somewhat objective, but reports from professional organizations, such as the OPCW, will receive more weight. Countries hold their military capabilities with high regard and secrecy, and that theory is present with non-state actors as well. In addition, chemical weapons are not equal. Chlorine is more readily available and simpler to produce into military grade chemical weapons than sarin. This research will propose likely hoods to describe the viability of threat that Hezbollah and the Islamic state pose as a chemical weapon threat. During the analysis, this thesis used the
following likelihoods to assess the threat. Not likely determines that there is a lack of evidence to support the hypothesis. Likely assesses there is evidence to support the hypothesis, but not more than fifty percent of the total evidence. Very likely assesses that significant evidence presented supports the hypothesis.

**Chapter 4: Data Analysis**

**Case Study**

**Ancient Times - 1889**

The use of chemicals during warfare has occurred for thousands of years. Although most of the chemical weapons used have been associated with a military conflict, terrorist organizations have obtained chemicals and used them in various ways against military and civilian targets in an attempt to further their group’s goals. In 2009, a researcher from the University of Leicester in the United Kingdom found evidence from ancient Rome in A.D. 256 of the earliest use of chemical weapons. Ishaan Tharoor, writing for *Time*, provides some details on the ancient use of chemical weapons:

Unconventional methods were used by both antiquity's weak and strong. In 332 B.C., the citizens of the doomed port of Tyre catapulted basins of burning sand at Alexander the Great's advancing army. Falling from the sky, the sand, says Mayor, "would have had the same ghastly effect as white phosphorus," the chemical agent allegedly used during Israel's recent bombardment of Gaza, not far to the south of ancient Tyre. A Chinese ruler in A.D. 178 put down a peasant revolt by encircling the rebels with chariots heaped with limestone powder. Accompanied by a cacophonous troupe of drummers, the
charioteers pumped the powder into a primitive tear gas even more corrosive and lethal than its modern equivalent. The peasants didn't stand a chance.

The use of chemicals as weapons in ancient times also existed in various other varieties such as poisons, fire agents, and gases. Some popular methods included applying poisons on arrows and contaminating food and water. By burning a mixture of substances or materials to produce gases, defending armies could thwart oncoming attacks. This was truly the beginning of chemical warfare; the weapons enabled one side to gain the upper hand in battle by propagating fear and confusion among the enemy ranks. In the 18th and 19th centuries, the use of poisons in warfare became less accepted. In the late 1800s, President Abraham Lincoln signed a War Department General Order, which stated that the use of poison should be “wholly excluded from modern warfare (Gilbert, 2014).”

1900-1950

World War I saw the first large scale use of modern chemical weapons. It was not until World War II that the first reported use of chemical weapons by an extremist group occurred. In 1946, a few months after the end of the war, Abba Kovner formed the Nakam Group. After the Jewish Brigade rejected his plans, he shifted his group’s focus to continue fighting as a guerrilla force against Germans and revenge the deaths of all the Jews killed during the war. The group grew to around 60 members from former Partisans and other Jews who survived the Holocaust. Their primary goal was to “execute an operation that would cause a broad international response that would be a warning to anyone who might consider trying to harm Jews again. (War History Online, 2014)” Their plan was to poison the water supplies of several German cities, aiming to kill six million Germans. The Nakam Group was close to obtaining the chemicals needed to
complete this mission as the ship carrying the supplies arrived in France. The discovery of Kovner’s forged papers resulted in his arrest (War History Online, 2014). His accomplices aboard the ship destroyed the chemicals by throwing them overboard. The deputy of the group then executed their plan B by poisoning 3,000 loaves of bread with arsenic at a German prison camp. The camp, Langwasser internment camp, near Nuremberg, held 12,000 German POWs of which 1,900 fell ill and an estimated 300-400 died from the incident.

What little data exists from 1900-1950 suggests that this was the largest incident of terrorism in the world in which chemicals were used directly as weapons; this is to be distinguished from the use of “chemical weapons,” which involve the deployment of chemical agents using weaponized delivery systems. It is unclear whether the Nakam Group was state sponsored, and although never officially deemed a terrorist organizations, they were certainly an extremist organization looking to conduct mass homicides of those responsible for the holocaust.

1950 – 2000

This period saw a spike in terrorism related incidents, especially with chemical weapons. Data from the Global Terrorism Database (GTD) has 78 recorded cases of successful terrorism attacks involving chemical weapons or the use of a chemical as a weapon (Global Terrorism Database, 2015). Of the 78 terrorist attacks using chemical weapons, 22 cases had fatalities.

Two of the attacks that standout were perpetrated by Aum Shinrikyo in Japan and involved the use of sarin gas. Shoko Asahara formed Aum Shinrikyo after failing to win support

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6 Data from the GTD is produce by START: A Center of Excellence of the U.S. Department of Homeland Security and only captures data starting in 1970. The criteria used to produce this data included only successful attacks and evidence proving there was no doubt of terrorism (Global Terrorism Database, 2015).
in the 1989 general election (Seto, 2001). The group is an apocalyptic Japanese cult with a belief that world salvation would come through the destruction of the world’s population (Aum Supreme Truth (AUM), 2006).

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Figure 3. Attacks using chemical weapons from 1970-1999 (Global Terrorism Database, 2015).

The attack in the city of Matsumoto in Nagano, Japan occurred in 1995 and assessed to be a test of the chemical the group was manufacturing (Seto, 2001). One year prior the group had successfully produced a VX-agent and sprayed sarin gas in a residential area of Matsumoto. The attack resulted in seven fatalities and an estimated 500 injured from the gas. The following year, the group attacked a Japanese subway system by releasing sarin gas during morning rush hour. The attack targeted three subway lines, resulting in twelve fatalities and an estimated 6,000 injured. The attackers transported the chemical in liquid form in plastic bags on five separate subway cars. This method shows the group was familiar with the properties of the chemical as it is slow to evaporate (Organization for the Prohibition of Chemical Weapons,
Liquid sarin evaporates into a gas when exposed to oxygen, but at a slow pace. This method allowed the attackers to escape the subway after they punctured the bags of liquid sarin on the trains. After discovering that Aum Shinrikyo was behind the attack, the U.S. classified the group as a terrorist organization. Based on the data by GTD, this was the first terrorist attack using solely a chemical as a weapon that had devastating effects.

2000 – Current

From 2000 to 2014, the GTD reports 87 attacks using chemical weapons by a terrorist or terrorist group (Global Terrorism Database, 2015). This is a significant increase in attacks using a chemical or chemical weapon. In the previous period, 78 attacks occurred over 30 years. During this fourteen-year period, the attacks exceed the previous 30 years, confirming a dramatic increase involving chemical weapons. A majority of the attacks occurred during the U.S. involvement in Afghanistan and Iraq. The most significant of the occurrences causing the most fatalities was in 2007, perpetrated by AQI using vehicle borne explosives carrying chlorine gas. These attacks targeted checkpoints and police stations in Iraq and accounted for a large portion of the fatalities and injuries (Global Terrorism Database, 2015). In 2009-2012 in Afghanistan, there were approximately a dozen attacks conducted by the Taliban, or suspected by the Taliban, involving toxic chemicals. The primary targets were schools where girls were attending. The Taliban routinely targeted civilians because of their opposition to female education. At this point in history, AQI was primarily targeting Iraqi police and military targets with forms of chemical weapons. In Afghanistan, however, the Taliban were primarily targeting civilian targets with forms of chemical weapons.
In 2014, the first reported mortar attack with chlorine gas occurred. The Global Terrorism Database attributes ISIS as the perpetrator of the mortars (Global Terrorism Database, 2015). Up until this point, the use of chemical weapons was in the form of “homemade” bombs and small-scale attacks. Throughout 2014 and 2015, reports began to increase of military style attacks by the Islamic State using chemical weapons in Iraq and Syria. It is difficult to discern how many chemical attacks have occurred; however, reports indicate that on at least four occasions the Islamic State has used chemical weapons (Blake, 2015). Germany’s federal intelligence service, Bundesnachrichtendienst (BND), indicates they have collected evidence of the use of mustard gas in Northern Iraq on at least one occasion (Associated Press in Berlin, 2015). This report, published in September 2015, stated:

.. the BND chief, Gerhard Schindler, as saying that the agency has “information that IS used mustard gas in northern Iraq”.

Figure 4. Attacks using chemical weapons from 2000-2014 (Global Terrorism Database, 2015).
Schindler told the paper that the mustard gas either came from old Iraqi stockpiles produced under Saddam Hussein’s rule or was manufactured by Isis after it seized the University of Mosul (Associated Press in Berlin, 2015).

In addition, there are numerous reports of the use of chlorine gas in conjunction with mortars. Based on the current situation, it is difficult for experts to confirm or deny these claims, thus open source reports play a large part. The UN has voted to begin an investigation into which groups were involved in the chemical weapon attacks in Syria (Blake, 2015).

The most recent reports assess that the Islamic State is manufacturing mustard gas. A U.S. official told the BBC, "We assess that they have an active chemical weapons little research cell that they're working on to try and get better at it (Blake, 2015).” A second theory is that the Islamic State found chemical weapons stockpiles in Syria or in Iraq. The U.S. official stated that this assessment is more unlikely as the U.S. would likely have discovered the chemical weapons in Iraq and that the Islamic State was unlikely to have obtained them from Syria before the destruction of their stockpiles (Blake, 2015).

Analysis of Data

Several key points presented aid in the analysis of the problem statement. The chemical weapons disarmament of Syria and the Assad regime plays a critical role in the availability of chemical weapons. Second, the lack of data that Hezbollah has used or tried to obtain a chemical weapon capability is an interesting finding. Lastly, the abundance of evidence on the reported use and production of chemicals by the Islamic state is a significant finding.
The removal of over 1,300 metric tons of reported chemical weapons was a step in the right direction at preventing this deadly capability from getting in the wrong hands. However, questions remain over the security of the production sites during removal and if Syria declared all of their chemical weapons. As previously mentioned, Syria was not mandated to declare chlorine gas as part of the agreement. This is due in fact that chlorine is not part of the schedule of chemical under the CWC because it still has important commercial applications (Organization for the Prohibition of Chemical Weapons, 2014). As previously mentioned, the CWC prohibits the use of chlorine as well as any chemical in war. Reports from the U.N. investigating team also indicated that they were limited to what areas they could inspect based on the poor security and the threat to inspectors. In addition, inspectors could only visit the sites declared by the Assad regime. Since security in the region had deteriorated in the past year, inspectors presumably had access to even fewer chemical weapons sites. Earlier this year, the U.S. intelligence community released alarming reports suggesting the Assad regime hid caches of chemical weapons that were supposed to be reported (Entous & Bendavid, 2015). Syria’s declaration only included strategic weapons and did not include short-range munitions such as mortars and rockets, which are the types of weapons outfitted with chemicals and used on both sides of the conflict (Organisation for the Prohibition of Chemical Weapons, 2015).

Although the CWC agreement removed a significant amount of chemical weapons from the region, the current assessment is that Syria’s capability to deploy short-range chemical weapons still exists (Kozak, 2015). It is unlikely that the Assad regime has or will provide the weapons or capability to the Islamic State since the Assad regime is battling against them for control in areas throughout the country. The Assad regime does stand the chance of losing
control of production facilities and weapons stockpiles if the Islamic State continues to gain territory.

The international community understands that Hezbollah supports the Assad regime. What is unclear is if they were involved in the attacks involving chemical weapons. The data, or lack thereof, from multiple sources shows that Hezbollah has not used any form of chemical weapon in an attack in recent history. There are several reports from 2013 that indicate the Syrian government transferred chemical weapons to Hezbollah (Berman & Miller, 2013) (Israel Hayom Staff, 2013). One of the reports indicates that the source was from defecting Syrian military officials. Chuck Hagel, the U.S. Secretary of Defense in 2013 stated that, “if Assad is prepared to use chemical weapons against his own people, we have to be concerned that terrorist groups like Hezbollah, which has forces in Syria supporting the Assad regime, could acquire and would use them. (Hummel, 2013)” Based on the history of Hezbollah and the support they receive from Iran and Syria, it is likely that if they wanted to obtain chemical weapons or the capability to produce them, they could. Their stated goals for involvement in the conflict are keeping the lines of communication open from Iran and preventing a Sunni regime from taking over should the Assad regime collapse. The successes that the Assad regime saw in 2013 directly related to the involvement and support of Hezbollah’s fighters on the battlefield. In addition, the leader of Hezbollah has publicly stated that his organization has no desire to obtain chemical weapons. Hezbollah’s involvement in the Syrian conflict, including their potential to acquire chemical weapons, is a significant concern for Israel. Israel has a direct concern if Hezbollah obtains chemical weapons, and based on historic events, would act if hard evidence were available to support that claim. History has proven that Israel does not let the violation of
their red lines go unanswered without severe consequences and this would likely remain true of Hezbollah obtained chemical weapons.

The reports of the Islamic State using and producing military style chemical weapons in Iraq and Syria support the hypothesis that they are likely to become a viable chemical weapons threat in the near future (Blake, 2015). In addition, understanding the history and ideology of the Islamic State is important in this analysis. The group stems from AQI and the case study presents data that AQI conducted large-scale chemical weapon attacks in Iraq using car bombs and chlorine tanks. It is also telling that even the Taliban and AQI, who certainly love to traffic in human misery, feel that the Islamic State goes too far and have denounced that brutal tactics.

Evidence supports that Hezbollah has the necessary access to obtain chemical weapons. Their historic support from Iran and Syria provides at least a means to achieve the capability. Syria previously maintained a significant chemical weapons capability and reportedly still retains a short-range chemical weapon capability. On the other side of this argument is the willingness of either Iran or Syria to provide this capability. Based on historic events, there would be consequences if Hezbollah obtained chemical weapons, specifically from Israel. Syria crossed several red lines with minimal consequences from the international community. Israel displayed their resolve against Hezbollah obtaining any weapons from Syria when they targeted a convoy of missiles from Syria as well as damaging a chemical weapons production facility with air strikes in 2013 (Berman & Miller, 2013). Israel will act again if threatened by Hezbollah obtaining chemical weapons.

The lack of evidence found during this research suggests that Hezbollah is not aggressively pursuing chemical weapons, but absence of evidence is not evidence of existence.
Hezbollah’s stated goal to support the Assad regime does not support the desire to obtain the capability. Hezbollah does have other goals outside of supporting the Assad regime to include destroying Israel; however, the deployment of up to 5,000 troops to Syria matched with unprecedented reports of young recruits being deployed to combat suggest that their resources are strained (Schenker, 2015). With their constrained resources, Hezbollah likely could not commit the necessary resources to defend against an attack from Israel. In addition, the fact that there are no reported or historic uses of chemical weapons by Hezbollah provides indications of their ideology on the use of chemical weapons. However, their ideology could change at any point in the near future. As previously discussed, a chemical weapon provides advantages not otherwise attainable from traditional weapons. Their need for chemical weapons does not yet outweigh the consequences of publicly acknowledging a chemical weapons capability. Hezbollah’s skill as an armed force currently provides them with the credibility they need as displayed with their successes in support of the Assad regime.

The Islamic State has both the access and ideology to obtain a chemical weapon capability. Historic attacks from the group’s original parent group, AQI, prove that their ideology supports the use of chemical weapons. Evidence now proves that attacks have occurred involving the use of chemical weapons. In a report just released by the OPCW provides the first official confirmation on the use of sulfur mustard in an attack north of Aleppo. (Deutsch, 2015) The findings, a result of the ongoing ingestions into the use of chemical weapons in Syria, did not determine who employed the chemical weapons or where they originated, but a diplomatic source stated that they likely employed the mustard gas during a clash between the Islamic State and another rebel group (Deutsch, 2015). These attacks, involving military style weapons, indicate that at a minimum the Islamic State has the access to military style chemical weapons.
Their brutal tactics along with the public denouncements by the Taliban and Al Qaeda show that their methods of operating are extreme, even to extreme organizations. What is interesting is that both the Taliban and Al Qaeda have used forms of chemical weapons, yet the overall extremism of the Islamic State does not align with either organization. Their ideology clearly does not limit the use of chemical weapons.

Chapter 5: Conclusion

The thesis used open source material to assess if Hezbollah or the Islamic State will present a chemical weapons threat in the near future based off their ideologies and the instability in Syria and Iraq. The instability in Syria and Iraq has allowed non-state actors such as the Islamic State to grow rapidly, seizing large portions of area and military vehicles and weapons. In addition, it has provided an opportunity for Hezbollah to become a valuable ally on the side of the Assad regime. The threat of chemical weapons falling into the hands of terrorist organizations was a primary reason for the U.S. military involvement in the Syrian conflict.

Hezbollah has specific goals for assisting the Assad regime. The main findings suggest that Hezbollah does have access to chemical weapons but their ideologies do not support employing them. Based on their involvement with the Assad regime as well as the support they receive from Iran, they could obtain this capability. Hezbollah’s long history with Syria and Iran also support this finding. The research also suggests that their ideologies do not support obtaining and employing chemical weapons, at least at this time. This is an important finding in the research based on multiple complex factors. First, based on the available open source data, Hezbollah has not previously used chemical weapons in an attack. It is no secret that Hezbollah receives financial support as well as training, weapons, and explosives from Iran. Prior to the
Syrian conflict, they also received diplomatic, political, and logistical support from Syrian. If obtaining a chemical weapon were a goal of the organization, they would be able to receive this support from the external aid they receive from either Iran or Syria. Second, Hezbollah likely understands what obtaining chemical weapons will mean for their organization. Hezbollah’s support in Lebanon may be in question if they were to obtain and use chemical weapons. Lastly, Israel would assuredly not let Hezbollah obtain this capability. This lends to the overall objectives for the group as an organization.

The results of this study suggest the Islamic State has the access to chemical weapons and their ideologies fully support using them in any matter necessary to achieve their goals. The availability of these deadly weapons in the region directly links to the Islamic States ability to obtain chemical weapons. In addition, the Islamic State’s parent organization, AQI, has shown the capability to use chemical weapons in previous attacks. The Islamic State has exposed countless accounts of their tortuous and barbaric tactics that undoubtedly displays their ideologies not only support the use of chemical weapons, but war crimes even worse. The conditions in Syria and Iraq have allowed this organization to succeed and the pace at which the conflict in Syria has progressed has added new information to the problem in addition to what this thesis addressed. The recent reports prove that chemical weapons were used earlier this year suggest that the Islamic State may have already used chemical weapons and have the ability to produce them. The reports have led the U.S. and the U.N. to open another investigation based on reports from numerous Kurdish forces fighting the Islamic State (Dearden, 2015). Officials from the U.S. have stated they have identified at least four occasions where the Islamic State used mustard gas (Blake, 2015). The evidence leans strongly towards the Islamic State and that they have used chemicals weapons and likely have the ability to produce them on a small scale.
The case study presented provides a short chronology of chemical weapons use by terrorists and terrorist organizations. It also highlights the devastating effects that are apparent when this capability gets in the wrong hands. A group’s desire to obtain chemical weapons is difficult to assess but history proves that there are attainable means for a non-state actor to obtain and use chemical weapons. History has also shown that a terrorist organization has not yet obtained the capability to produce military grade chemical weapons. If the international community allows the Islamic State to continue on their current path, a new chapter in terrorism will evolve. The Islamic State will transform into a viable state actor, severely destabilizing the region.

Now with the new public acknowledgement of Russian involvement, this brings new complexities into this conflict. The U.S. may be entering into a proxy war, with involvement from Iran and Russia. The U.S. and its allies must address the Islamic State with military action. Al Qaeda was able to successfully plan the attack on September 11th from relatively small training camps in Afghanistan. The conditions in Syria are such that non-state actors are finding it increasingly easy to consolidate power and threaten the interests of the United States and its allies throughout the region. The Islamic State has proven its ability to capture and maintain large areas of Syria and Iraq as well as recruit fighters from across the globe. If allowed to continue on the current path, the outcome could be far worse than anything the U.S. and its allies have experienced. Hezbollah will not likely present a chemical weapons threat in the near future whereas the Islamic State will very likely become a viable chemical weapons threat without intervention from the international community. The U.S. must clearly set conditions and policies and not let actors in the conflict disregard or violate them without severe consequences.
References


Berman, L., & Miller, E. (2013). ‘*Hezbollah’s long-range missiles can carry chemical weapons’.* The Times of Israel.


