

Terrorist Innovations in Weapons of Mass Effect, Phase II

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WORKSHOP REPORT

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January 2012

This report is the product of a collaboration between the Naval Postgraduate School's Center on Contemporary Conflict, the Defense Threat Reduction Agency, and the Centre for the Study of Terrorism and Political Violence at the University of St. Andrews.

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The Naval Postgraduate School's Center on Contemporary Conflict is the research wing of the Department of National Security Affairs (NSA) and specializes in the study of international relations, security policy, and regional studies. One of the CCC's programs is the Project on Advanced Systems and Concepts for Countering WMD (PASCC). PASCC operates as a program planning and implementation office, research center, and intellectual clearinghouse for the execution of analysis and future-oriented studies and dialogues for the Defense Threat Reduction Agency.

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It was with great sadness that we received the news of Prof. Paul Wilkinson’s passing. As the founder of the Centre for the Study of Terrorism and Political Violence at the University of St. Andrews and a leading expert in the field, he was scheduled to survey the development of key innovations in aviation terrorism over three decades. Regrettably, he died a few weeks before our workshop.

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EXECUTIVE SUMMARY

On October 6-7, 2011, experts gathered for a workshop at the University of St. Andrews, Scotland to discuss the factors that both facilitate and hinder terrorist innovations. This workshop is part of a two-year Defense Threat Reduction Agency (DTRA) sponsored research project that aims to shed light on the *preconditions*, *causes*, and *predictive indicators* associated with terrorist innovation in weapons of mass effect (WMEs).¹

Organized jointly by the Center on Contemporary Conflict at the Naval Postgraduate School, and the Centre for the Study of Terrorism and Political Violence at the University of St. Andrews, the workshop brought together specialists from academia and government who presented their research findings on twelve historical and contemporary cases of terrorist innovation, ranging from the 1972 Munich Olympics hostage crisis to the current use of improvised explosive devices (IEDs) in Iraq and Afghanistan. They also discussed major terrorist campaigns that exhibited multiple innovations in WME terrorism, including the cases of the Tamil Tigers in Sri Lanka and anti-Russian rebels in Chechnya.

Participants also took on the challenge of explaining failed and foiled WME terrorist innovations, discussing a diverse set of cases that included Ramzi Yousef's 1995 Bojinka plot; the True Knights of the Ku Klux Klan's 1997 conspiracy to blow up a natural gas facility in Texas; and Al-Qaeda's short-lived campaign to use chlorine bombs against Iraqis in 2006-2007. Lastly, specialists sought to explain the puzzle of absence of innovation in the cases of maritime terrorism, the Revolutionary Armed Forces of Colombia (FARC), and Loyalist paramilitaries in Northern Ireland.

These case studies deliberately built upon a 2010 DTRA-sponsored workshop and research report with a similar mission.² That workshop generated a number of generalizations about what motivates innovation; how terrorists come to innovate; and whether it is possible to anticipate innovations in WME terrorism. The 2011 workshop broadened the findings of the previous meeting by drawing on new case studies of successful and failed innovations in order to confirm and refine earlier expert findings.

Preconditions and Causes of WME Innovations

Preconditions refer to the context in which innovation takes place. This includes political, technological, or security developments which make innovation by terrorist groups more or less likely. Causes are those internal and external drivers that directly precipitate innovation or accelerate its progress.

Organizational Factors

In the previous DTRA-sponsored workshop, experts agreed that *larger, resource-rich terrorist organizations would find it easier to innovate* based on the cases that they studied. This finding was confirmed repeatedly in the 2011 workshop as different case studies were explored.

¹ The Homeland Security Advisory Council defines WMEs as “weapons capable of inflicting grave destruction, psychological and/or economic damage.” For further discussion of the definition of WMEs see Appendix 1.

² Maria J. Rasmussen and Mohammed M. Hafez, “Terrorist Innovations in Weapons of Mass Effect: Preconditions, Causes, and Predictive Indicators.” Report by the Defense Threat Reduction Agency (August 2010), accessible at: http://www.nps.edu/Academics/Centers/CCC/Research/Terrorist_WME_Spotlight_2010-12.html.

- The Black September Organization (BSO) behind the 1972 Munich Olympics operation, which became the iconic symbol of 20th century international terrorism and a source of inspiration for future attacks on the summer games, was as a front for the Palestine Liberation Organization (PLO), a centralized, hierarchical organization with tremendous resources and a vast network of transnational operatives and state sponsors. Access to these resources was central to the abduction of Israeli hostages during the summer games.
- The Liberation Tigers of Tamil Eelam (LTTE), which led a campaign of violence for over 25 years in Sri Lanka, one that featured many innovations in WME terrorism, was a large, hierarchical, and centralized insurgent organization that sought to present itself as a proto-state. Experts highlighted its ability to tap into financing and technical expertise from the Tamil diaspora, which facilitated arms procurement as well as experimentation with different forms of terrorism.
- In the case of IEDs in Iraq and Afghanistan, both experts agreed that financial incentives were an important catalyst for innovative IED designs and deployment techniques. Insurgents that deployed IEDs unsuccessfully were dropped from the money and munitions distribution grid, which created a strong enticement for cells to innovate in the design, placement, or delivery of IEDs.

Conversely, *organizations that were small, fractious, and resource-poor had a harder time succeeding in their innovations* (and some did not even try).

- The Loyalists in Northern Ireland, which seemed uninterested in innovation (with or without WMEs), and the extreme right movement in the U.S., which had tried several WME plots, were made up of highly fractious groups and were generally resource-poor. They lacked state sponsors and other external sources of funding. Their cadres tended to be undereducated and prone to criminality, and agents of the security services easily infiltrated their groups because they were susceptible to financial inducements. Their WME aspirations, to the extent they had any, were not matched by their capabilities.
- Ramzi Yousef's ingeniously complex Bojinka plot to bring down 11-12 American airliners over the Pacific in 1995 by detonating a nitroglycerine-based liquid bomb was ultimately hindered by the lack of sufficient resources because he operated independently of any organization. He had to concoct the volatile chemical mix in a shabby apartment in Manila, Philippines. Luckily, a fire in the apartment exposed the plot and eventually led to the capture of the entire cell.

However, researchers argued in 2011 that group size and access to resources are not sufficient preconditions for successful WME innovations. *Large, centralized, and resource-rich organizations do not automatically innovate if they lack the intent to escalate the conflict.*

- The FARC is a large, hierarchical, and resource-rich organization that has operated in Colombia since the 1960s. It has not been particularly innovative, and has never countenanced the use of WMEs. It is embedded in a beneficial war economy (drug trade, racketeering, kidnapping for ransom, etc.) that could be undermined by undue escalation in violence. It favors the status quo of low-intensity conflict and, consequently, lacks the intent to escalate through WME attacks.
- When Al-Qaeda in Iraq (AQI) used chlorine bombs against Sunni tribes that had turned against it in 2006-2007, it was a large organization with central leadership and relatively abundant access to war resources, including chlorine canisters. AQI abandoned this tactic

largely because the original intent to intimidate its enemies was no longer a viable option given changes in the security and political environment. It was the lack of intent, not of capabilities, that led AQI to abandon its WME innovation in 2007.

There was widespread agreement among the participants in the 2010 workshop that *leadership is central to innovation*. In nearly all the cases of WME innovation discussed at that workshop, leaders played a key role in motivating, demanding, funding, and justifying deadly innovation. The 2011 workshop confirmed the importance of leadership in WME innovations.

- Shamil Basaev, the Chechen rebel leader killed in 2006, was instrumental to most spectacular terrorist attacks in the second Chechen-Russia war that began in 1999, including the 2004 Beslan school mass hostage taking which ended with the tragic death of 334 hostages. Basaev's success as an innovative leader was linked directly to his military experience. He was not an "evil genius," or a religious fanatic but a military man with extensive combat experience and pride in his operational acumen. Basaev was also open to new ideas and had high tolerance for risk.
- Abu Iyad, the mastermind of the Munich operation, was partially blamed for the disastrous Black September defeat in Jordan and deposed from his high-ranking intelligence position within the PLO. The demotion led him in a radical direction in an effort to regain his organizational prestige and in order to compete with his rivals within the PLO.
- Ramzi Yousef and his uncle Khaled Sheikh Mohammed, the culprits behind the highly ambitious Bojinka plot, were both maniacal entrepreneurs who wanted to make a name for themselves in the pantheon of global terrorists. Yousef's successful design of a nitroglycerine liquid bomb would not have been possible had he lacked bomb-making knowledge and experience. He had a master's degree in electrical engineering, and technical experience developed during months spent in a jihadist explosives camp in Afghanistan. Mohammed's connections to transnational militants enabled him to fund the operation and provide Yousef with willing operatives.

Where leadership qualities such as technical knowledge, determination, or charisma were lacking, WME innovations did not materialize or resulted in failure.

- American extreme right groups failed to produce a successful WME attack because their leaders were often paid informants of the state. Those who did not collude with the authorities often lacked the education or technical acumen to conjure up complex plots and bring together the requisite resources for operational success. Their grand ambitions rarely matched their capabilities.
- Leaders of the Loyalist paramilitaries in Northern Ireland were too preoccupied by personality conflicts and too involved in illegal profit-making ventures. Their drive for personal aggrandizement displaced their capacity for innovation. Intra-Loyalist competition prevented collaboration and resource sharing, but instead produced constant feuds over territorial control and racketeering.

Motivational Factors

Experts agreed with the 2010 finding that *terrorist innovation is usually motivated by problem solving intended to overcome constraints in the security environment, or limitations in the political one*. Terrorists seek new technologies, targets, or opportunities in order to circumvent

security measures, revitalize support for their cause, pursue a new strategy to remedy failed ones, or simply to escalate a conflict because lower levels of violence are assessed to be ineffective.

- The 1972 Munich Olympics operation was directly linked to the violent expulsion of Palestinian guerrilla factions from Jordan at the hands of forces loyal to the Jordanian monarchy. The September 1970-July 1971 war, known as the events of Black September, deprived the PLO of a front from which to attack Israel, creating a major crisis for the PLO and demoralizing its fighters and constituency. The Munich operation was an attempt to regain legitimacy for PLO's senior leaders after an ignominious defeat.
- AQI's 2006-2007 chlorine bombings campaign was born out of desperation. A new counterinsurgency strategy by Coalition Forces mobilized AQI's Sunni tribal allies against it. Tribal leaders were paid handsomely for recruiting their followers into local militias known as "Sons of Iraq" in order to clear their areas of AQI insurgents. This changing environment not only threatened AQI's operational space, it also sought to reconcile disgruntled Sunnis with the new Iraqi government that AQI sought to destabilize through sectarian warfare. AQI used chlorine bombings to intimidate Sunni tribal leaders, but ultimately it failed.
- The Bojinka plot relied on a nitroglycerine-based bomb that could be assembled on the plane. This tactical innovation, among the first liquid bomb plots against aviation transport, was intended to circumvent airline security detection measures against dynamite or plastic explosives. Ever aware of intrusive airport security procedures, Yousef wanted to create a bomb that could be assembled on a plane rather than to rely on a ready-made one that risked detection prior to boarding. (Future plots by Al-Qaeda followed a similar modus operandi).

In the 2011 workshop, *experts provided limited support to the previous year's finding that ideology is important in inspiring and legitimating WME attacks*. It was previously argued at the 2010 workshop that groups with grandiose worldviews, millenarian ideologies, or deep feelings of humiliation are less likely to impede the use of mass casualty terrorism than those with clearly defined objectives. The case studies from this year's workshop offer conflicting evidence concerning this proposition.

- Racist and anti-government ideologies were important in inspiring WME plots in America's extreme right movement, and Ramzi Yousef's hatred of the United States and affiliation with Islamist extremists certainly removed any moral inhibitions on killing hundreds of innocent passengers on American airliners.
- The absence of a strong ideology among Loyalist paramilitaries in Northern Ireland may help explain their lack of interest in WME innovations. Similarly, the FARC's transformation from a revolutionary communist movement to one that is predominantly concerned with maintaining its war economy helps explain the absence of WMEs in Colombia.

However, terrorist campaigns by the LTTE and Chechen rebels, two of the deadliest insurgent movements in the post-WWII period, featured numerous innovations that led to mass casualties, yet experts did not highlight ideology as a primary driver of these deadly innovations.

- In the case of the LTTE, the brutality of the conflict, the access to technical and financial support from the Tamil diaspora, and the desire to be seen as a proto-state were much more important than ideology in producing innovations.
- In the case of Chechen rebels, it was noted that Shamil Basaev was hardly motivated by ideology; his operational successes were the result of extensive military training, battlefield

experience, and environmental factors (brutal civil war, access to arms, and security corruption) that facilitated innovation.

These cases and others suggest that *ideology can be a factor in inspiring WME innovations, but it is not as salient a theme as we had previously concluded.*

Enabling Factors

Experts in the 2011 workshop gave more weight to the role of safe havens and external support in the production of WME innovations than did participants in the 2010 workshop. From the cases selected for analysis, it is clear that *groups that had safe havens and external sources of support were more successful in innovating than those who did not.* The Black September Organization, the LTTE, Chechen rebels, and insurgents in Iraq and Afghanistan had the advantage of safe havens, or at least vast areas of operation that gave them sufficient space to train, experiment, and shelter their weaponry and fighters.

- Black September selected the Olympics in West Germany as a “target of opportunity” because of the permissive environment in that country, where Palestinian students and émigrés, and sympathetic radical left-wing groups, facilitated smaller attacks in the lead up to the Olympics plot. Operational success also depended on the training of terrorists in Libya and the collusion of Arab consulates and embassies in smuggling weapons and providing forged travel documents to the operatives.
- The LTTE controlled a third of Sri Lanka, mainly in the north, allowing it to organize its own army, navy, air force, police, judiciary, education, and satellite television station. Moreover, it benefited tremendously from financial and technical assistance given to it by the Tamil diaspora.
- In the Chechen case, the presence of widespread corruption created what could be called “legal safe havens” through which terrorists were able to bribe their way through checkpoints and airport security procedures. Moreover, the inclusion of Arab fighters opened channels of funding from the Middle East.

Conversely, the case study discussion highlighted that groups that lacked safe havens and external sponsors either did not innovate or usually failed in their innovations. This was the case with America’s extreme right groups and Northern Ireland’s Loyalist paramilitaries. In both instances, these groups encountered community policing, vigilant security services that infiltrated their ranks, and hardly any support from external sponsors.

Ramzi Yousef’s foiled Bojinka plot did have the benefit of external sponsors, but it lacked the advantage of a physical safe haven. Had the apartment fire that exposed the plot to the Philippines police taken place in Afghanistan under the Taliban, chances are Yousef would have continued to work on perfecting his conspiracy and bomb design until he succeeded.

Predictive Indicators

Predictive indicators refer to the observable steps and preparatory behaviors leading to the innovative terrorist attack that could have revealed the terrorists’ intent had they been investigated thoroughly.

In the 2010 workshop, experts highlighted some predictive indicators that could help flag or foil terrorist innovations. They cautioned, however, that the evolutionary nature of innovation,

which is marked by gradual learning and adaptation, and the seemingly endless possibilities of combining older innovations in new ways make it difficult to pinpoint the trajectory of specific innovations. They agreed that intelligence and/or law enforcement work are indispensable for detecting and preventing WME attacks.

The 2011 workshop reinforced these findings and emphasized the importance of human intelligence and police vigilance in foiling innovative plots. Where these factors were lacking, as in the 1972 Munich Olympics operation, terrorists were successful; when they were present, as in the Bojinka plot, terrorists were foiled.

- In the Munich plot, previous Black September terrorist operations in West Germany should have led to robust security measures to protect the summer games. The terrorists were able to conduct repeatedly hostile reconnaissance of the target as well as gain employment in the Olympic Village. Eight terrorists easily scaled the outer perimeter fence and smuggled weapons into the site, despite earlier warnings that terrorists could target Israeli athletes.
- In the Bojinka plot, the Philippine police acted with due diligence when they spotted a makeshift laboratory in a dingy Manila apartment that was set ablaze by volatile chemicals. They monitored the place and arrested one of the terrorists that came back to retrieve valuables. This simple vigilant act perhaps saved thousands of lives.

Human intelligence also played a critical role in repeatedly foiling major plots:

- In the case of extreme right terrorists in the U.S., the presence of FBI informants in the ranks of American racist and anti-government groups has prevented these extremists from executing WME operations on several occasions, including the 1997 plot by the True Knights of the Ku Klux Klan discussed in this workshop.
- Deep infiltration of Loyalists in Northern Ireland by the security services was also a factor for their lack of innovation.

However, the 2011 workshop attendees were not overly optimistic about our ability to develop predictive indicators. Some experts argued that both workshops could help to pinpoint whether terrorist innovation is about to occur, but not the direction of innovation. Others stated that prediction might be possible in the case of individual terrorist groups, not in the case of terrorism in general.

Experts suggested new avenues for research to build on this two-year study. Specifically, we know little about why terrorists show a predilection for some attacks over others. Why do some targets become iconic in the eyes of terrorists? Why do they persist in attacking those iconic targets, as opposed to attacking targets that might be closer or easier? One recommendation was that we should consider the study of terrorist targeting as a follow-on project.

A second recommendation involved a different focus: the terrorists themselves. Experts suggested we should concentrate on the terrorists in order to understand the decision-making processes within their organizations. The overall goal of the research would be to observe how the terrorists articulate the discussion about innovation, and to uncover restraints on their actions.

A third recommendation entailed redressing the paucity in research on the diffusion of terrorist innovation. We should seize this opportunity to investigate how terrorist innovation spread from one organization to another now that we have a better understanding of how innovation emerges in the first place.

SECTION 1: BACKGROUND AND OBJECTIVES

In 2011, the Defense Threat Reduction Agency (DTRA) sponsored a workshop to analyze the *causes*, *processes*, and *preparatory behaviors* associated with terrorist innovations in weapons of mass effect (WMEs). The objective was to generate *predictive indicators* that could help counterterrorism specialists in law enforcement and intelligence organizations respond to emergent threats in the use of WMEs. Organized jointly by the Center on Contemporary Conflict at the Naval Postgraduate School, and the Centre for the Study of Terrorism and Political Violence at the University of St. Andrews, this workshop built upon a 2010 DTRA-sponsored workshop and research report with a similar mission, but drawing on different case studies and expert participants.³ The goals of the 2011 workshop were two-fold.

1. To broaden the conclusions reached during the 2010 meeting by drawing on new case studies that may confirm or challenge earlier expert findings.
2. To analyze negative cases of innovation, i.e. cases where the terrorists attempted to innovate but could not bring their efforts to fruition (failed innovation), or were thwarted in their undertaking (foiled innovation), or never attempted to innovate in the first place.

Expanding Previous Research

In 2010, in Phase I of this project, DTRA invited experts to analyze seven historical and contemporary incidents of terrorist innovation:

- Airline hijackings by the Popular Front for the Liberation of Palestine (PFLP) between 1968 and 1972.
- The 1973 assassination of the Spanish Prime Minister Luis Carrero Blanco by Euskadi Ta Askatasuna (ETA).
- The 1984 attempted assassination of British Prime Minister Margaret Thatcher by the Irish Republican Army (IRA).
- The 1995 sarin gas attack on the Tokyo subway by the Aum Shinrikyo cult.
- The 1995 Oklahoma City bombing by Timothy McVeigh.
- Al-Qaeda's September 11, 2001, attacks on the United States.
- The July 7, 2005 bombings of the London Underground and bus system by a cell of radicalized British Muslims with links to militants in Pakistan.

The experts assessed three categories of terrorist innovation: *tactical*, *strategic*, and *organizational*, with emphasis placed on the first two. Tactical innovation usually involves inventing or adopting new techniques or technologies to achieve unchanging objectives. Strategic innovation entails formulating new objectives, which necessitate the adoption of new operations, targets, or technologies to advance those objectives. Organizational innovation involves new ways of structuring the terrorist group or inventive methods of drawing recruits and/or popularizing the group's ideas.

Each specialist was asked to explore the *preconditions*, *causes*, and *predictive indicators* associated with terrorist innovation. Preconditions refer to the context in which innovation took place. This includes political, technological, or security developments which made innovation by terrorist

³ Rasmussen and Hafez, "Terrorist Innovations," 2010.

groups more or less likely. Causes are those internal and external drivers that directly precipitate innovation or accelerate its progress. Predictive indicators refer to the observable steps and preparatory behaviors leading to the innovative terrorist attack that could have revealed the terrorists' intent, had they been investigated thoroughly.

Given DTRA's mission of countering weapons of mass destruction, we focused our analysis on terrorist weapons of mass effect. We measured WMEs by their *lethality* (at least 100 fatalities); *destructiveness* (devastation in at least one square mile in urban settings or 10 square miles in rural areas); *disruptive impact* (damage to at least one critical facility, significant interruptions in services, or at least 10 billion dollars in economic losses for a major power like the U.S.); and/or severe *adverse psychological effects* on mass publics.⁴

For each case study, experts explored independently a set of questions to facilitate comparative analysis of patterns across cases:

- What factors internal and external to the terrorist organization motivated innovation? What were the incentives to innovate?
- What were the leadership and organizational requirements for innovation? Did top leaders within the organization drive innovation or did aspiring terrorist entrepreneurs outside of the leadership hierarchy drive it? Did the structure of the organization shape in any way the pace of innovation or receptivity to it?
- When and in what context did innovation occur in the evolutionary cycle of the terrorist group? Were there any particular accelerants of innovation such as technological change, social or/and political contexts, ideological shifts, state sponsorship, or/and security countermeasures?
- Was the catalyst for innovation more a result of pressures internal or external to the terrorist organization?
- Looking back, would it have been possible for counterterrorism specialists to observe and connect together the developments that made innovation possible? What indicators would have enabled security specialists to anticipate the trajectory of innovation?
- Looking forward, what does your case tell us about how innovation in terrorism takes place? How might your case inform future efforts to forecast emergent advances in terrorist methods of attack, especially the use of WMEs?

This workshop structure provided an opportunity for competitive analyses and encouraged informed dialogue across cases. The goal all along has been to think analytically and systematically about the underlying factors—the critical drivers—that bring tactical, strategic, and organizational innovations to fruition. The findings from Phase I are included in a separate report, which we urge you to read.⁵

In 2011, in Phase II of the project, we wanted to test the validity of our earlier findings by applying the conceptual and analytical frameworks of Phase I to a new set of case studies. We invited discussion of the 1972 Munich Olympics hostage crisis, in which the Palestinian Black September Organization (BSO) held, and eventually killed, nine Israeli athletes and officials attending the summer games. This was an important case study because it was the first act of terrorism against the Olympics, setting a precedent that has, unfortunately, inspired other terrorist attempts on this global sporting event. The 1972 Munich Olympics also became the iconic symbol of international terrorism in the twentieth century.

⁴ For further discussion of the definition of WMEs, see Appendix 1.

⁵ Rasmussen and Hafez, "Terrorist Innovations," 2010.

In Phase II, we widened our focus beyond specific incidents of innovation, looking at terrorist campaigns by groups that have been particularly innovative over time, such as the Liberation Tigers of Tamil Eelam (LTTE) since 1976, and the Chechen campaign against Russia since 1999. Closer to home, we explored the evolution in the design, delivery, and placement of Improvised Explosive Devices (IEDs) in Afghanistan and Iraq in the last decade.

Analyzing Negative Cases

Experts in Phase I of the project recommended strongly that we avoid the trap of looking only at successful cases of terrorist innovation. We can learn a lot by analyzing cases of failed or foiled innovations as well. Studying such cases enables us to understand the obstacles that stand in the way of innovation, and will allow us to derive lessons for counterterrorism. Thus, in Phase II, we discussed three failed or foiled plots:

- The Bojinka plot, in which Ramzi Yousef attempted to blow up eleven airplanes over Southeast Asia in 1995.
- The True Knights of the Ku Klux Klan's plot to blow up natural gas storage tanks near Ft. Worth, Texas, in 1997.
- Al Qaeda's short-lived campaign of chlorine truck bombs in Iraq in 2006-07.

Another recommendation which emerged out of our first workshop was that we should analyze why some terrorist groups do not seek to innovate, even when they appear to have the same objectives, resources, and organizational structures which have favored innovation in other cases. Therefore, in Phase II we explored why terrorist organizations seem uninterested in maritime terrorism, despite fears that maritime transport is vulnerable to such attacks. We also looked closely at the Revolutionary Armed Forces of Colombia (FARC), a hierarchical and very wealthy organization that also controlled roughly one third of the national territory over decades but did not seem too interested in innovation. Finally, we studied the Protestant terrorist organizations in Northern Ireland, the Ulster Freedom Fighters (UFF, the military wing of the Ulster Defense Association) and the Ulster Volunteer Force (UVF), which were in competition not only with each other but also with the highly innovative IRA, and yet confined themselves to a repetitive repertoire of actions.

The table below summarizes the cases selected in Phase II and lists the invited specialists that gathered for the workshop at the University of St. Andrews on 6-7 October 2011.⁶

⁶ Biographical information on each researcher is in Appendix VII.

Innovative Attacks and Campaigns			
Time Frame	Case Study	Organization	Researchers
1972	Munich Olympics	Black September Organization	Ariel Merari Andrew Silke
1976-2009	Campaign in Sri Lanka	Tamil Tigers	Chris Smith Shanaka Jayasekara
1999-2006	Campaign in Chechnya	Shamil Basaev's Network	Cerwyn Moore Adam Dolnik
2001-2011	IEDs in Afghanistan and Iraq	Insurgent Groups	Thomas Johnson Richard Morales
Failed, Foiled, and Untried Innovations			
Time Frame	Case Study	Perpetrators	Researcher
1995	Foiled Bojinka plot	Ramzi Yousef	Zachary Abuza
1997	Foiled plot to bomb natural gas plant in Texas	True Knights of the KKK	Paul Brister
2006-2007	Failed chlorine bombs	Al-Qaeda in Iraq	Michael Knights
2006	Government policy as a foil for terrorist innovation	N/A	Javier Argomaniz
N/A	Absence of maritime terrorism	N/A	Peter Lehr
N/A	Absence of Loyalist innovations in N. Ireland	N/A	Jonathan Tonge
N/A	Absence of FARC innovations in Colombia	N/A	Peter Waldmann

SECTION 2: THE 1972 MUNICH OLYMPICS HOSTAGE CRISIS

On 5 September 1972, during the Summer Olympics in Munich, Germany, eight terrorists from the Palestinian Black September Organization (a cover for the Fatah faction of the Palestine Liberation Organization or PLO) entered the Olympic Village and took nine Israeli athletes and officials hostage. Two additional athletes were killed while offering resistance. The terrorists demanded the release of 233 Palestinian prisoners from Israeli jails and of two Red Army Faction terrorists held in West Germany. After Israel refused to accede to their demands, the West German security forces devised a hostage rescue plan that went awry, resulting in the death of all nine hostages, a German police officer, and five terrorists. The three remaining terrorists were arrested, but were freed two months later following another hostage incident.

Participants and Objectives

In this panel, Prof. Ariel Merari, Tel Aviv University, and Prof. Andrew Silke, University of East London, discussed the innovative aspects of this attack, analyzed the factors that contributed to the formation of Black September, and its decision to strike at Munich. Dr. Mohammed Hafez, Naval Postgraduate School, moderated the session.

Discussion and Findings

Both experts agreed that the main innovation in this attack lay in its taboo-breaking target selection: the Olympics. As Prof. Silke pointed out, the Olympics had never been attacked prior to 1972, but virtually every Summer Olympics since that date has been threatened by some terrorist plot. Hundreds of millions of live television viewers and radio listeners provided the terrorists with the ultimate stage on which to air their grievances and act out their armed struggle against Israel. Indeed, this attack became the iconic symbol of terrorism in the 20th century.

Munich also represented a strategic innovation for Fatah. Prior to this episode, the organization had limited its armed struggle to Israel and the occupied Palestinian territories. The shift to international terrorism marked a departure from the local to the global, from the conservative to the spectacular. Additionally, Dr. Adam Dolnik (Marshall Center and University of Wollongong) noted that Munich represents a tactical innovation. For the first time, the terrorists were willing to execute their hostages *en masse*. However, this innovation was accidental. The terrorists had not set deadlines for the execution of hostages. The latter were killed only after the security forces opened fire on the terrorists.

Preconditions and Causes of Innovation

According to Prof. Merari, the innovation at Munich must be understood in the context of the ignominious defeat of Palestinian guerrilla factions based in Jordan at the hands of forces loyal to the Jordanian monarch, King Hussein. The civil war, which began in September 1970 and ended in July 1971, became known as the events of Black September (hence the name of the new terrorist faction). The Palestinian guerrillas were expelled from Jordan and were thus deprived of a base from which to attack Israel. Many of the Palestinian fighters eventually settled in Lebanon, but it took them several years to open that front for attacks against northern Israel. The defeat of 1970-71 constituted a major crisis for the PLO. The events of Black September were highly demoralizing to Palestinians, who three years earlier had suffered the defeat of the 1967 Six Day War. "Fatah felt it

must do something dramatic,” argued Prof. Merari. Unable to attack Israel from Jordan, Fatah now viewed international terrorism as an attractive option.

More importantly, the events of Black September in Jordan precipitated a period of intra-organizational strife within Fatah. A younger generation of Fatah cadres, bitter at the incompetence of senior “armchair” revolutionaries who led them to defeat in a critical front state, began to splinter off into more radical factions, demanding the intensification of the armed struggle for liberation. The formation of the Black September Organization and the Munich operation were proactive measures intended to keep younger and radical cadres within the organizational fold—albeit under the cover of a new faction designed to avenge the events in Jordan. These intra-organizational schisms were exacerbated by competition among Fatah’s top leadership in the Central Committee. Specifically, Salah Khalaf (better known as Abu Iyad), the mastermind of the Munich operation, was partially blamed for the disastrous defeat in Jordan and deposed from his high-ranking intelligence position within Fatah. The demotion led him in a more radical direction in an effort to regain his organizational prestige and power base.

In summary, the main push for Munich came from Fatah’s perception that it was losing the allegiance of the Palestinian people and needed to boost their morale; and from the need to respond to intra-organizational rivalries, fueled by personality clashes among top leaders. However, both experts concur that Black September, as a front group for the PLO, was able to draw on the support and leadership of a larger, hierarchical and centralized organization that had plenty of financial and military resources at its disposal, as well as a long history and extensive experience with a variety of terrorist repertoires. This finding conforms to the key judgment of experts from last year’s workshop that larger, centralized organizations seem more capable of innovation than smaller, resource-poor ones.

In addition, according to both experts, Munich represented a “target of opportunity” for Black September. The presence of Palestinian students and émigrés in Europe familiar with the language and operational arena, and of sympathetic radical left-wing groups, provided the terrorists a reservoir of local talent from which to draw intelligence and assistance. Perhaps more important for operational success, Prof. Merari argues, was the collusion of Arab consulates and embassies in smuggling weapons and providing forged travel documents as well as a safe haven to the terrorists.

Prof. Silke pointed to the “shocking vulnerability of the target” as another precondition for the innovative operation. Munich’s security budget, in 2010 prices, was 10 million dollars; whereas the 2012 London Olympics have a security budget of over one billion dollars. The lax security of the West German authorities was not only shocking in retrospect; there were a number of warning signals at the time that should have led to diligent security procedures. The fact that Palestinian terrorists had been operating in West Germany for some time prior to the Olympics hostage crisis was not the least of these warning signs.

Abu Iyad had three objectives for the Munich attack:

- To highlight the cause of the Palestinians and remind the world of their plight;
- To use the extraordinary concentration of mass media assembled for the widely-popular Summer Olympics; and
- To humiliate Israel by forcing it to release Palestinian prisoners.

According to Prof. Merari, there was an ancillary reason why Abu Iyad selected the Munich Olympics as a target: the refusal of the Olympic Committee to include a Palestinian delegation in the summer games. Abu Iyad reportedly said, “Let’s participate in the Olympics in our own way.”

Preparatory Behaviors

The experts disagreed on the duration of the preparations for the operation, with estimates ranging from seven weeks to eight months. However, they agreed that the terrorists undertook a number of preparatory measures, some of which could have signaled that a terrorist plot was in the making. First, the terrorists' travel patterns should have alerted security operatives that an operation was being prepared. Team members carrying poorly forged passports were sent to European countries, including Germany, to acquire familiarity with local customs and habits, although they were not briefed on the target until later in the planning process. Team members also underwent extensive military training in Libya. Second, a more comprehensive security apparatus at the Olympic Village would have alerted the authorities. The two Black September commanders conducted reconnaissance tours and visited the Olympic Village. According to Prof. Silke, the two commanders secured jobs inside the Olympic Village, which points to a poor vetting process. Once employed, they frequently visited out-of-bound areas within the compound.

Consequences of Innovation

Both experts agreed that while the 1972 Munich operation did not succeed in releasing hostages or achieving the Palestinian goal of statehood, it was seen as a success for the organization. According to Prof. Merari, this operation saw the PLO through a dangerous period in which it could have lost command of the Palestinian people to competitors inside Jordan as well as the West Bank. The PLO was able to recapture the initiative and survive a critical defeat until it built up its guerrilla infrastructure in Lebanon by the mid 1970s. Media attention during the operation, and Israel's reprisals after Munich, drove many volunteers into Fatah and gave newfound legitimacy to an organization previously beset by factional infighting and second-guessing.

SECTION 3: ADAPTIVE INNOVATION: IEDS IN IRAQ AND AFGHANISTAN

Insurgents in Iraq and Afghanistan since 2001 have introduced improvised explosive devices (IEDs) to the battlefield with deadly effect. Initial efforts to counter these homemade bombs have produced waves of insurgent innovations in the design, placement, and delivery of IEDs. As a result, IEDs have been responsible for the vast majority of deaths and injuries of Coalition Forces in Iraq and the International Security Assistance Force (ISAF) in Afghanistan. While individual IEDs fabricated by insurgents cannot be classified as Weapons of Mass Effect, the cumulative injurious consequences of IEDs on American and allied forces have been massive in scale and scope—physically, psychologically, and economically. Tracing the evolution of IEDs in Iraq and Afghanistan may reveal a great deal about what motivates innovation and how the process of innovation occurs.

Participants and Objectives

Mr. Thomas Johnson, an Afghanistan specialist at the Naval Postgraduate School, and Col. Richard Morales, United States Army, discussed innovations in IEDs in Afghanistan and Iraq, and the adaptive nature of insurgent actors in those arenas. Dr. Mark Currie, University of St. Andrews, chaired this panel.

Discussion and Findings

Both speakers were impressed with the ability of insurgents in Iraq and Afghanistan to vex the world's superpower with homemade bombs produced out of relatively modest means and capabilities. The innovations in IEDs have taken place in a broader context of an asymmetrical conflict in which the weaker party had to innovate and adapt against their powerful adversary.

In Afghanistan, insurgents have been innovative on several fronts. They created a shadow government to help local villages address needs (e.g. land and water right disputes) left unaddressed by the central government in Kabul. They also used information operations effectively. Displaying media savvy, the insurgents' information operations deploy traditional and new media technologies in a systematic strategic communication plan designed to prevent us from winning local hearts and minds. Lastly, they conducted sophisticated targeted assassination missions that mimic the Central Intelligence Agency's (CIA) drone-led targeted killings.

The Taliban is more adaptive than innovative, argued Mr. Johnson. Its need to innovate is muted by the defensive nature of its war. The Afghans have been fighting for decades and have nowhere else to go. They have time on their side and are less driven to take the initiative in a war of attrition against an adversary that is sensitive to casualties and economic costs. Key to the Taliban's success has been its "local knowledge of social and cultural dynamics and local terrain." It exploits this advantage to the hilt.

When it comes to IEDs, the media and the general public tend to focus on roadside bombs, but insurgents in both the Iraqi and Afghan arenas have been able to innovate in a variety of ways:

- Through car and truck bombs (or vehicle-borne IEDs, VBIEDs)
- Wiring homes with explosives (house-borne IEDs, HBIEDs)
- Using suicide bombers of varying ages, genders, profiles, and delivery and detonation methods (in Afghanistan, turban *[lunge]* bombs are increasingly used in suicide bombings)

Even the placement of IEDs involved a great deal of learning and innovation. For example, insurgents would place IEDs in a visible place so they can be dug out easily, but they would also place secondary ones buried deeper below and rigged to explode as the visible ones were removed.

According to Col. Morales, another important aspect of IED innovation relates to insurgent adaptation to countermeasures. Insurgents study the habits, maneuvers, and countermeasures of the adversary and react accordingly. He provided a number of examples of variations in EFPs (explosively-formed projectiles) which the insurgents employed as they experimented with alternative ways to target our armored vehicles. “Within a week they would adjust to our tweaks.”

Preconditions and Causes of Innovation

Col. Morales pointed out that innovation in IEDs was usually preceded by several conditions. Overstretched military resources (especially prior to the surge in Iraq) and our poor coordination with the locals allowed insurgents to establish safe havens where they could experiment and improve on IED designs. (In Afghanistan, the terrain naturally provided a safe haven). In addition, the availability of unsecured munitions that could serve as powerful ordnances in IEDs, reduced the obstacles to innovation.

Dr. Michael Knights, an Iraq specialist at the Washington Institute for Near East Policy, highlighted the role of money in the IED innovation process. Insurgent commanders use money effectively to ensure continuous improvements in the design and deployment of IEDs. Those cells that succeed get the money, while those that fail repeatedly are cut off from the distribution list. Consequently, cells have a strong incentive to innovate on the design and delivery of their IEDs lest they lose a lucrative source of income. Jihadi videos that we often view as propaganda are actually produced as proof that IEDs have accomplished the task for which money was paid.

Col. Morales concurred with this assessment, adding that insurgents had a pay structure that rewarded cells based on the type of vehicles they were able to destroy or immobilize with their IEDs. Mr. Johnson also agreed that money is an important source of innovation in Afghanistan, pointing to evidence that Taliban insurgents sent proof of their IED attacks to sponsors inside Pakistan to substantiate their proper use of funds.

SECTION 4: FAILED AND FOILED INNOVATIONS

Making generalizations about innovations in terrorism requires us to investigate cases in which innovations failed or were foiled. Looking at negative cases can have both theoretical and policy implications. By comparing successful and failed/foiled innovations, we can isolate the variables present in the former but not the latter, and argue with confidence that those variables are necessary if innovation is to occur. In addition, by studying failed and foiled innovations we may be able to identify measures to preclude or block terrorist innovations in the future.

Participants and Objectives

This panel discussed two failed plots. Prof. Zachary Abuza, National War College, discussed lessons learned from Ramzi Yousef's 1995 Bojinka Plot and Dr. Michael Knights, Washington Institute for Near East Policy, discussed Al-Qaeda in Iraq's short-lived chlorine bombing campaign in 2006-2007. The panel also included a foiled plot: Maj. Paul Brister, Naval Postgraduate School, discussed the factors that prevented the True Knights of the Ku Klux Klan from bombing a gas refinery outside of Ft. Worth, Texas, in 1997. Dr. Mohammed Hafez chaired this panel.

Discussion and Findings

The Bojinka Plot, 1995

Bojinka was an imaginative and complex plot by the terrorist mastermind Ramzi Yousef to bring down as many as 11 or 12 U.S. airliners over the Pacific. He designed a small nitroglycerine-based bomb that could be hidden in contact lens solution bottles. The blasting caps were to be hidden in the heel of a shoe, while a Casio watch would serve as a detonator. The bomb's components, which would have been able to circumvent extant airport security measures, were to be assembled on planes by a team of five terrorists that would board flights, deplane, and transfer to connecting ones. Two weeks before execution, however, the volatile chemicals necessary for the plot caught fire and the police discovered the makeshift bomb-making laboratory in a Manila, Philippines apartment. Police staked out the apartment building waiting for its inhabitants to return. They captured one of the team members, who eventually led them to the entire cell.

According to Prof. Abuza, this case represents tactical, strategic, and organizational innovation. Tactically, this was only the third time that any terrorist group had resorted to a liquid bomb. Previous terrorist plots relied on dynamite or plastic explosives. Ever aware of intrusive airport security procedures, Yousef wanted to create a bomb that could be assembled on a plane rather than rely on a ready-made one that could be detected prior to boarding. The use of a nitroglycerine-based bomb was an incremental innovation on Yousef's part. It built on his earlier use of this material during the 1993 car bomb attack on New York's World Trade Center. The Bojinka bomb was tested twice in December 1994. The first test was in a movie theater in Manila, which wounded several people, and the second in the airline bombing of PAL 434, which killed a Japanese businessman. Yousef concluded from these "test runs" that the bomb had to be made bigger to ensure the airplane's complete destruction. Therefore, argues Prof. Abuza, the tactical innovation was successful despite the fact that the Bojinka plot never materialized.

Strategically, this plot, had it succeeded, would have turned common household items into weapons of mass effect—killing hundreds of passengers, causing extensive economic disruptions and losses in the billions of dollars, perhaps bringing international air travel to a halt.

Organizationally, the Bojinka plot was innovative because Yousef marshaled resources without creating a formal organization. Contrary to a common misconception, this plot was not the product of a lone wolf terrorist. Yousef drew upon a network of operatives, not the least of which was his infamous uncle Khaled Sheikh Mohammed (KSM). KSM set up front companies to finance the operation and mask potentially suspicious chemical purchases. Yousef drew upon regional militants through his earlier connections with extremists in Afghanistan and the Philippines, but avoided an organizational structure that could constrain his ambitious plots. He was truly transnational, but equally independent.

Preconditions and Causes of Innovation

Prof. Abuza pointed out several factors that drove the Bojinka plot forward. The most important of these was Ramzi Yousef's skill, experience, and imagination. Yousef had a master's degree in electrical engineering, and technical experience and skills developed during months spent in Afghanistan's Khalidin Camp, where Al-Qaeda and other terrorists acquired extensive training in the assembly and use of explosives. His earlier use of nitroglycerine-based bombs allowed him to learn from past failures (or partial successes). Designing the perfect bomb became an obsession. In addition, Yousef was the "quintessential maniacal entrepreneur" who distrusted organizations and wanted to leave an indelible mark through his nefarious deeds. According to Prof. Abuza, Yousef "did not just want to be *a* terrorist, he wanted to be *the* terrorist."

Yousef's kinship connection to KSM allowed him to tap into transnational financial and operational support necessary for a plot conceived by a person who did not wish to be constrained by a formal, hierarchical organization. Interestingly, the absence of an organization, argues Prof. Abuza, enabled Yousef to think big and act without organizational impediments.

Reasons for Failed Innovation

The Bojinka plot suffered from two major paradoxes:

- Yousef did not wish to be constrained by an extensive organizational structure, but his complicated plot failed because of insufficient organizational resources. According to Prof. Abuza, the complexity of the bomb—the volatility of its chemicals—required near perfect laboratory conditions to fabricate the deadly mix. Forced to execute this operation on the cheap, Yousef could not pull it off. Being resource-poor led to the innovation in bomb design, but it also led to the fire in the dingy Manila apartment that exposed the plot.
- Yousef's larger-than-life imagination inspired this extremely complex plot, yet this complexity is beyond the reach of resource-poor terrorists, or those without major safe havens or state sponsors. If Yousef had limited his ambition to destroying one plane instead of 11 or 12, Bojinka may have succeeded.

Prof. Abuza pointed to a third paradox in the Bojinka plot: Yousef's bomb design was successful, yet no terrorist organization has sought to replicate it. He attributes this failure in diffusion to Yousef's egotistical ambition and distrust of organizations, which were the drivers of the plot to begin with. Yousef did not like to share his knowledge because he wanted to be the man behind the spectacular act of terrorism. His manuals were technical in nature, not written for the average terrorist. Absent an organization, there were no channels for knowledge sharing and diffusion.

Al-Qaeda in Iraq and Chlorine Bombs (2006-2007)

Between 21 October 2006 and 1 July 2007, Al-Qaeda in Iraq (AQI) dispatched 19 car and truck bombs containing chlorine cylinders, some of which were as large as one-ton pressurized chlorine tanks. Their intent was to disperse noxious gas upon detonation. In addition to killing many people, these bombs were intended to increase the psychological potency of insurgent operations and slow down the rescue effort. First responders were forced to deploy gas masks or wait for the poisonous air to dissipate before they could attend to the injured.

AQI is an extremist Sunni insurgent group with links to the transnational Al-Qaeda terrorist network. Its main goal in Iraq has been to spark sectarian warfare and destabilize the Shiite-led government so that it could be replaced by a radical Islamist state. One of its former leaders, Abu Ayub al-Masri (also known as Abu Hamza al-Muhajir), had called on scientists from the Muslim world to develop improvised weapons of mass destruction for use against the United States and its allies. The use of chlorine bombs in Iraq was an important escalation in the insurgency because it signaled the willingness of insurgents to experiment with chemical weapons on a massive scale. Fortunately, chlorine bombs proved ineffective. Chlorine thins rapidly, particularly in strong winds, which diminishes its lethal effect. To be deadly, chlorine must be inhaled in large and concentrated quantities, which usually requires significant atmospheric stability, low wind speeds, and median air temperatures. In addition, explosions tend to burn off the gas, rather than disperse it, further reducing its deadly potential. Thus, dispersal by explosives is not the ideal method for terrorists.

AQI abandoned these innovative bombs. Dr. Knights maintained that the main reason had to do with the “intent, not capabilities” of AQI. The latter could have continued to experiment and perhaps improve the design of their chlorine bombs, but the intended strategy behind these attacks was no longer viable.

- The chlorine bombing campaign was a highly localized phenomenon, mainly around the Ramadi and Fallujah districts (13 out of 19 attacks were in those two districts).
- AQI's objective was to intimidate Sunni tribal leaders who were making alliances with Coalition Forces and the Iraqi government under the auspices of the “Sons of Iraq” program, which had as its goal the elimination of AQI and other insurgent groups from their Sunni strongholds.
- AQI realized that the bombs failed to intimidate the intended targets.

Preconditions and Causes of Innovation

According to Dr. Knights, crisis and desperation—and a quest for survival—is what drove AQI to innovate in the use of chlorine bombs. Prior to mid-2006, AQI enjoyed a hospitable safe haven in Anbar province. However, a new counterinsurgency strategy by Coalition Forces called for Sunni tribal alliances against insurgents. Tribal leaders were paid handsomely for recruiting their followers into local militias known as “Sons of Iraq.” These militias formed a broader movement called the “Anbar Awakening.” The objectives of these militias and local vigilantes was to clear their areas of AQI and other insurgent groups, capture their weapons caches, and act as local police to secure their areas. The Awakening movement threatened AQI's operational space. The movement also sought to reconcile disgruntled Sunnis with a new Iraqi order that AQI sought to destabilize through sectarian warfare with the Shiite majority. Thus, AQI felt threatened physically and politically by the Awakening tribal movement. “Desperate times call for desperate measures,” argued Dr. Knights.

AQI sought to regain its aura of intimidation by amplifying its messages of deterrence

through deadlier truck bombings against Sunni tribal leaders, militias, and local government buildings. The use of chlorine bombs was a sub-set of a larger campaign of intensified bombings and assassinations against AQI's former allies.

An important precondition to the use of chlorine bombs was the widespread availability of unsecured chlorine canisters in Iraq, and in Fallujah (Anbar province) in particular, where Iraq's largest chlorine manufacturing plant is located. Insurgents can acquire chlorine tanks from water and sewage treatment plants, where security is lax.

Reasons for Failed Innovation

Dr. Knights maintained that three factors help explain why AQI abandoned its use of chlorine bombs after July 2007:

- The tactic proved ineffective for the aforementioned reasons. If the goal was to intimidate tribal leaders, the latter proved resilient against these attacks.
- The tactic was controversial, so much so that AQI never claimed responsibility for its use. Rather than intimidate, it further added to the legitimacy of the tribal councils who were fighting the "criminal" network.
- Most important of all, AQI was physically removed from the eastern Anbar province by late 2007, thus removing any possibility of conducting operations in that area. These attacks were too little, too late to save AQI from the tide of the Awakening movement.

Dr. Knights argued that AQI could revert to this tactic if it chose to, thus it is the intent behind these operations, not the limits of AQI's capabilities, that is blocking further innovation in the use of chlorine bombs.

The True Knights of the KKK and the 1997 Foiled WME Bombing Plot

In April 1997, the FBI's North Texas Anti-Terrorism Task Force foiled a plot to blow up a natural gas refinery plant near Ft. Worth. According to the Bureau, upwards of 10,000 people could have been killed had the plot succeeded. A team of five would-be terrorists, belonging to the extreme right True Knights of the Ku Klux Klan, conspired to plant bombs under gas storage tanks in order to release upon detonation highly toxic "sour gas" consisting of hydrogen sulfide. One of the bombs was to be placed in a highly visible location in order to attract a massive police presence. The conspirators not only wanted to kill a lot of people, but were also intending to create a colossal diversion to enable them to rob an armored cash transport vehicle. The terrorists' aim was to amass money to fund a race war.

Maj. Brister argued that this plot never stood a chance because the team leader, the Imperial Wizard Robert Spence, was an FBI informant. In fact, though numerous extreme right organizations in the United States have attempted to innovate with chemical and biological weapons, the FBI estimates that 15% of the membership of these groups is paid informants working for local, state or federal law enforcement. This plot is emblematic of the inability of extreme right (anti-government and racist) movements to bring their innovations to fruition. For example, in 1985 the Covenant, the Sword and the Arm of the Lord (CSA, a survivalist group) attempted to poison the water supplies in major U.S. cities with potassium cyanide, unaware that in large reservoirs, the poison would be diluted and lose its effectiveness. In 1991, members of the Minnesota Patriots Council, a tax protester group, developed ricin by following instructions from a mail order catalog. They intended to use the toxin on local and federal officials. The wife of a group member contacted the Sheriff's

Department before the terrorist plans were fully formed. In 1998, Larry Wayne Harris, a microbiologist and militant in the Aryan Nations and Christian Patriots, developed bubonic plague with a view to attacking the New York City subway, but was arrested after an acolyte contacted the FBI.

The plot featured several shortcomings common to other foiled conspiracies by the extreme right: The group's ambitious plans were unmatched by organizational knowledge, skills, and resources necessary for successful execution. Law enforcement had infiltrated the organization, even at the highest leadership levels. In addition, the extreme right was and is fragmented and its leaders are constantly involved in personality squabbles. The extreme right has therefore produced an abundance of innovative plots with grand targeting logic, but lacks the organizational resources, skills, and experience necessary to bring these ambitious conspiracies to fruition.

Preconditions and Causes of Innovation

Maj. Brister pointed out that since Timothy McVeigh's 1995 bombing of the Alfred P. Murrah building in Oklahoma City, there have been at least 75 plots by extreme right wing groups, the vast majority of which fell below the threshold of WME conspiracies. However, seven of those (nearly 10%) could have been classified as WME plots, had they not failed or been foiled.

This fascination with WME attacks, argued Maj. Brister, is directly linked to three factors:

- **Ideology** – The ideological underpinnings of anti-government and racist groups preclude incremental reforms within existing political structures. Therefore, right wing extremists believe that their violence is necessary and could actually spark a revolutionary upheaval that would encourage like-minded groups to take up arms against the government or unleash a national race war.
- **Deficiency in resources** – The vast majority of members of the extreme right movement is significantly undereducated and comes from lower socio-economic strata. Being resource-poor, extreme right groups cannot rely on significant financial and organizational resources with which to advance their agendas through conventional political means, especially in a context where the government and nongovernmental organizations such as the Southern Poverty Law Center (SPLC) and the Anti-Defamation League (ADL) seek to bankrupt them through legal action. Deficiency in resources drives these groups to think innovatively about ways to cause mass effect on the cheap.
- **Fragmentation and intra-movement competition** – As noted earlier, this competition drives groups to differentiate themselves by producing spectacular attacks.

Reasons why the Innovation was Foiled

Major Brister believes that the “gap between intent and capabilities” is too wide for the atomized extreme right to succeed in executing WME plots. Unlike the case of Al-Qaeda in Iraq's chlorine bombs, where intent, not capabilities, was the reason for abandoning the WME innovation, extreme right groups have manifest intentions to use WMEs, but very few capabilities to do so. This movement lacks operational competence and intellectual acumen necessary for complicated conspiracies. Furthermore, vigilance by the authorities and effective use of informants facilitate early detection of complex plots. Lastly, watchdog nongovernmental organizations, such as the ADL and the SPLC, help expose dangerous rhetoric and behavior by extreme right groups, thus rendering an invaluable service to law enforcement agencies, especially when the latter are not focused on localized emerging threats.

SECTION 5: OBSTACLES TO TERRORIST INNOVATIONS

Historically, terrorists have been intent on attacking the aviation industry and remarkably innovative in this effort. The logic behind this target selection is obvious. As the late Prof. Paul Wilkinson, a leading expert on aviation terrorism, once explained, successful airline attacks enable terrorists to kill many people, instill fear in millions of airline passengers, impose tremendous economic costs on the targeted countries, and garner a global audience through unparalleled media coverage.

Governments have been equally motivated to block aviation terrorism and have continuously undertaken new and intrusive security procedures at airports and on airplanes, in order to prevent successful attacks on airliners. This cat-and-mouse game between governments and terrorists raises two questions:

1. Why do terrorists seem to fixate on certain target sets while remaining uninterested in others?
2. How do governments innovate in countering terrorist innovations?

Participants and Objectives

Dr. Peter Lehr and Dr. Javier Argomaniz, both from the University of St. Andrews, tackled these questions through two case studies. Dr. Lehr explained why terrorists are uninterested in maritime terrorism, and Dr. Argomaniz discussed the European Union's response to the 2006 plot to bring down several airplanes using liquid bombs. Prof. Richard English, Director of the Centre for the Study of Terrorism and Political Violence at St. Andrews, moderated the discussion.

Discussion and Findings

Maritime Terrorism

Dr. Lehr pointed out that terrorists have taken very little interest in maritime terrorism. Only two percent of all bombing attacks can be categorized as maritime terrorism, and only two attacks were actually successful—the 2000 suicide attack of the USS Cole in the Gulf of Aden (Yemen), and the 2002 suicide attack on the Limburg, a French supertanker transporting oil through the Gulf of Aden. “Why does it not happen more often?” asked Dr. Lehr. The discussion produced three possible explanations:

1. **Relatively unenticing targets** – Unlike airlines, which are iconic targets, attacks on sea vessels do not offer terrorists the same advantages highlighted by the late Prof. Wilkinson: high kill rates, tremendous economic costs, and global media attention. If they are unable to attack the iconic targets (airplanes), terrorists will be drawn to easier targets than maritime ones, such as ground transportation (buses, railways, subways).
2. **Limited resources and capabilities** – To achieve mass effect through maritime terrorism, terrorists will have to engage in “high impact/low probability” operations. The latter would require tremendous operational capabilities and resources, as well as sophisticated knowledge of maritime environments. These resources and capabilities are beyond the reach of most terrorist organizations.
3. **Muted psychological effect** – Unlike airlines, ships are not a major source of

transportation around the world. The majority of the world's population will view maritime terrorism as a local phenomenon that "will never happen to them" because they do not rely on sea transport. Therefore, this form of terrorism will not appeal to groups that seek global audiences.

In short, maritime terrorism is neither sufficiently iconic, nor sufficiently easy for terrorists to contemplate. It falls somewhere between aviation terrorism (high impact/low probability) and ground transportation attacks (low impact/high probability).

The discussion turned to future scenarios of maritime terrorism by states and sub-state actors. Dr. Lehr envisioned four possibilities:

- **Acts of piracy**, especially ones linked to Al-Qaeda affiliates in the Horn of Africa, could develop as a source of terrorist funding or as an attempt to artificially raise the price of oil. "Piracy is the biggest threat to maritime security, not terrorism," according to Dr. Lehr. While acknowledging the potential linkage between Al-Qaeda and Somali pirates, he insisted that most pirates are motivated by money, not political causes.
- **Deploying sea mines**, is a real possibility because it has already been used by the Tamil Tigers in Sri Lanka to deny Indian and Sri Lankan naval forces unfettered access to their waters.
- **Developing mini-submarines** to ferry money, illicit goods, people, and weapons is another potential scenario. The Colombian FARC has already demonstrated this capability. Dr. Lehr argued that mini-submers are not necessary for maritime terrorism unless the target is a high value one, in which case the submarine would be easily detected and would have only few minutes to engage its target. Mini-submers would probably be limited for transport purposes, not actual terrorist attacks.
- **Swarm attacks with small boats** is another possibility. According to Dr. Lehr, Iran has already deployed this tactic on tankers and has trained personnel on scuba diving attacks. The Tamil Tigers have also used these tactics against the Sri Lankan navy.

However, Dr. Lehr cautioned against an exaggerated sense of threat. He concluded that the real innovation in maritime terrorism would be for the terrorists to actually "embark on it in the first place."

Counterterrorism Measures in Response to Innovation

Dr. Argomaniz discussed the EU's counterterrorism measures in response to the highly innovative, but ultimately foiled, 2006 liquid explosives plot by British nationals linked to Al-Qaeda in Pakistan. The conspirators planned to use peroxide-based bombs to bring down 10 airliners over the Atlantic, which could have killed up to 7,000 people traveling from the United Kingdom to the United States and Canada, and would have certainly brought transatlantic air traffic to a halt.

This tactical innovation in terrorism, argued Dr. Argomaniz, was driven by the need to circumvent post-9/11 airport security measures that made traditional aviation hijackings and bombing techniques potentially obsolete. The essential preconditions that facilitated this plot included:

- Access to household goods that could be transformed into explosives
- Use of easily concealable bomb-making materials
- Access to Pakistan-based terrorists who supplied the conspirators with training in the

manufacture and use of liquid explosives.

Dr. Argomaniz was impressed with the “remarkably swift” implementation of new airline security procedures by the British government, which consisted of an initial ban on all hand luggage, followed by restrictions on the size of permissible hand baggage, and on the amount of liquids taken on board. More impressive, perhaps, is the lightning speed with which the EU countries implemented similar security regulations. After the conspirators’ arrests, it took all of three months for EU regulations to take effect. In less than six months, the new security rules were adopted worldwide, this despite complaints about delays from passengers and the airline industry.

Dr. Argomaniz concluded that international organizations and institutions can play an important role in depriving terrorists of the preconditions for successful innovation. There have been at least two major liquid plots since 1995, so this regulation, which will begin to phase out in April 2013, probably has played a role in preventing others from developing. Having said that, Dr. Argomaniz noted that previously successful countermeasures to protect the aviation industry have spurred innovations in terrorist means and methods, as evidenced by the 2009 “underwear bomb” and 2010 “ink cartridge bomb,” both of which emanated from Al-Qaeda operatives in Yemen.

SECTION 6: INNOVATIONS OVER TIME: LTTE IN SRI LANKA

The Liberation Tigers of Tamil Eelam (LTTE) in Sri Lanka was one of the most lethal armed groups to deploy terrorism effectively and with mass effects. It sustained a campaign for over 25 years, attacking by air, train, land, and sea. It is one of the few non-Islamist organizations to use suicide bombings consistently and effectively, even against high-value targets. The Tamils innovated in the use of suicide vests, promoted a cult of martyrdom, and deployed female human bombs. The organization had its own navy (Sea Tigers), air force (Sky Tigers), and uniformed guerrilla army with separate units for suicide missions (Black Tigers). The LTTE was a highly centralized, hierarchical organization around the cult-like figure of Velupillai Prabhakaran.

Participants and Objectives

Dr. Chris Smith, Chatham House, and Mr. Shanaka Jayasekara, Macquarie University, discussed the critical drivers behind LTTE's innovations over two and a half decades. The LTTE was a separatist organization that engaged in spectacular terrorist attacks that were as creative as they were effective. Dr. Orla Lynch, University of St. Andrews, chaired this panel.

Discussion and Findings

Dr. Smith began his analysis by pointing out that the LTTE was one of the most successful insurgent groups since the Second World War. In its heyday, the LTTE controlled a third of Sri Lanka, mainly in the north. Therefore, it took a particularly brutal campaign in 2009 to destroy the organization, with perhaps as many as 40,000 civilian fatalities. Mr. Jayasekara pointed out that bringing about the defeat of the LTTE required a very determined government which continued to pour military resources into the offensive, in spite of the fact that as many as 6,000 Sri Lankan troops lost their lives in the last 18 months of the campaign.

Preconditions and Causes of Innovation

Dr. Smith and Mr. Jayasekara highlighted several factors that contributed to LTTE's innovations, the most important of which was LTTE's desire to create a state within a state.

- LTTE ran a proto-state over the vast territory under its control in the north of Sri Lanka, organizing its own police force, judiciary, education, and satellite television.
- The desire to be seen as a viable state for the Tamils contributed directly to the formation of state-like military institutions such as a navy, army, and air force. These military structures were symbolic of a state in the making. Success of military innovations advanced the profile of the LTTE, both internally and abroad.

Both Dr. Smith and Mr. Jayasekara agreed that the LTTE's safe haven in the north was a necessary precondition to innovation. This haven gave them the time and space to innovate, learn from their errors, and improve their capabilities as well as their operations. In addition, both presenters pointed to the ability of the LTTE to draw upon the vast human resources and financing available in the Tamil diaspora. The money, arms, and technical skills from abroad gave the LTTE the requisite material basis for innovating, especially since the LTTE did not have a state sponsor to provide it with financing and arms.

- Dr. Smith explained that the 1983 pogroms against Tamils led to the flight overseas, “setting in motion a diaspora who would fund the Tigers in the future.”
- Many of the Tamils came from the “fishing caste,” which meant that they knew how to use the seas to transport goods and people to the south coast of India.
- The LTTE created an anti-caste culture that promoted the ethos of meritocracy, thus drawing into its organization many educated, English-speaking Tamils who were being pushed away by Sri Lanka’s discriminatory practices in education and government.

Dr. Smith pointed out that there is little evidence to suggest that the LTTE was innovative because it was competing with others. Prabhakaran, LTTE’s leader from the group’s inception until he was killed in 2009, eliminated all domestic competitors by the mid-1980s. So innovation was not driven by a desire to outcompete rivals.

LTTE’s Sky Tigers as an Illustrative Case Study

Mr. Jayasekara used the Sky Tigers as an illustrative case study of LTTE’s innovation process, highlighting three factors necessary for LTTE innovations:

- the existence of maritime smuggling networks
- the expertise and financing provided by the Tamil diaspora, and
- the LTTE’s ambition to be viewed as a state in the making.

The Sky Tigers were started by Vythilingam Sornalingam (Col. Shankar), an aeronautics engineer working for Air Canada before he joined the LTTE (he was killed in 2001). In the initial stages, the Sky Tigers experimented with micro-lights purchased from Australia. Thereafter, they purchased Czech-built fixed wing light aircraft and modified them to carry 30-50 kilo bombs with a release mechanism controlled by the pilot. The purchase was financed from Canada, but the planes were shipped to a flying school in South Africa. Next, they were transferred to Eritrea and disassembled for shipment to the LTTE via vessels that transported the planes in international waters off the coast of Sri Lanka. “As with all LTTE weapons supplies, the equipment was smuggled into Sri Lanka using fishing trawlers.”

As for training pilots, the role of the diaspora community is also clear:

- In 2005, two Tamils living abroad—one employed by an American airline company, and the other resident in Switzerland and working for a Swiss airline—conducted several training programs for LTTE pilots.
- One LTTE pilot was trained in France and the Czech Republic with the help of activists from the Tamil Coordinating Committee (TCC) in Paris.
- Some pilots were sent to Malaysia and Thailand for training.

According to Mr. Jayasekara, LTTE developed the Sky Tigers to meet three major objectives: to develop offensive capabilities; to facilitate logistics operations; and to emulate state structures and exhibit the “trappings of a separate state.”

The Sky Tigers were used in a number of attacks with varying degrees of success. Some sorties aimed at fuel storage facilities; others aimed to knock out radar installations and power stations in Colombo. At least one attack targeted Colombo’s International Airport, and several went after Sri Lankan airbases and military and naval facilities. The final mission was an airborne collision

impact attack on the Sri Lankan Tax Office building in Colombo. Mr. Jayasekara described how the LTTE built several runways to avoid detection and retaliation by Sri Lanka's air force. Sky Tigers would take off from one runway and land in another, the latter usually covered in sand until a plane was ready for landing.

SECTION 7: INNOVATIONS OVER TIME: CHECHEN INSURGENCY

The Chechen insurgents fighting for independence from Russia have repeatedly carried out spectacular terrorist attacks since the second Chechen War began in 1999, including the 2004 Beslan school mass hostage taking which ended with the tragic death of 334 hostages. Similar to the LTTE, Chechen insurgents have unleashed a diverse terrorist campaign that brought down airliners, destroyed subway trains, and seized thousands of hostages. The Chechen insurgents combined traditional tactics with suicide bombings, including female human bombs, to produce high casualty rates.

Participants and Objectives

In this panel, Dr. Cerwyn Moore, University of Birmingham, and Dr. Adam Dolnik, George C. Marshall European Center for Security Studies and University of Wollongong, discussed the innovations of the Shamil Basaev network and highlighted the role of his experience and leadership in innovative mass casualty terrorism against Russia and its regional allies. Dr. Tim Wilson, University of St. Andrews, moderated the discussion.

Discussion and Findings

According to Dr. Dolnik, Chechens have been much more innovative (and successful) than Al-Qaeda. The former has been able to carry out spectacular operations to which Al-Qaeda can only aspire. Their innovations have taken place on the tactical, strategic, and organizational levels.

Tactically, Chechen rebels were among the first to video tape and televise beheadings in order to demoralize Russia's conscript military. Chechen rebels were the first to plant and threaten to use radiological dispersal devices against major population centers. Chechen insurgents also used suicide bombers to strike in metro stations and on airplanes (they succeeded in bringing down two airliners near simultaneously in 2004). They are one of the few Islamist insurgent groups to use female suicide bombers, a method later emulated by other Islamists. Chechen insurgents have been able to strike at high value targets through targeted assassinations, including planting a bomb in a stadium, killing Akhmad Kayrov, a pro-Russia President of the Chechen republic, during a televised ceremony.

Strategically, Chechen rebels have been able to take their war of independence to the heart of Russia's cities, including Moscow. In doing so, they have used terrorist innovations to escalate the conflict and draw international attention to a relatively obscure regional struggle for independence. Specifically, they used lightning raids to capture hostages *en masse* and barricaded them in explosively rigged buildings while they publically negotiated their demands with the Russian authorities. The two most infamous and ultimately tragic barricade and hostage crises were the 2002 Nord-Ost siege, better known as the Moscow theater hostage crisis, in which 129 out of 850 were killed during a botched rescue attempt; and the 2004 Beslan school hostage crisis, in which 334 hostages out of more than 1,100 were killed in another failed rescue attempt (many of the victims were children). Another innovation was their use of female suicide bombers (the Black Widows). They videotaped and translated their statements in order to build a propaganda narrative of personal suffering and redemptive revenge by women who presumably were raped or otherwise traumatized at the hands of Russia's military offensives.

Organizationally, Dr. Moore noted, the Chechens effectively incorporated foreign fighters into their forces in order to draw financial support from the Middle East. Drawing on experienced

fighters with links to the anti-Soviet Afghan camps, they were able to open funding channels as well as draw the media support of jihadists around the world. Moreover, Chechen armed groups showed a capacity to adapt organizationally given the constraints under which they operated in Chechnya proper. Since 2000, they used multi-ethnic support networks from across the North Caucasus to enable a continuation of a regional insurgency, but crucially, this also enabled them to circumvent federal counterterrorism measures. Shamil Basaev, in particular, demonstrated a capacity to inspire, encourage and enable a multi-ethnic regional network called the Riyadh us-Saliheyn to facilitate a campaign of terrorism, named Operation Boomerang (December 2002 – September 2004).

Both experts noted that the Chechen insurgents pioneered the use of the Internet, as a resource and a propaganda tool. Chechen armed groups were ahead of Al-Qaeda in filming their attacks, copying and distributing materials in a range of formats to a multi-lingual audience, using a range of technologies (CDs, video cassettes, handheld camcorders, and satellite links) for training, fund-raising and to publicize their message.

Preconditions and Causes of Innovation

Both Dr. Moore and Dr. Dolnik highlighted the role of leadership, particularly that of Shamil Basaev, the leading Chechen insurgent leader before his violent demise in July 2006. Prior to his death, he built a regional network of highly loyal and effective followers, and established a repertoire of attacks that persist to this day.

According to both presenters, Basaev's success as a leader was linked directly to his military experience, as opposed to ideology, religious fanaticism, or some other motivation. He was not an "evil genius," both experts stressed, but a military man with extensive combat experience, and pride in his operational acumen.

- Basaev, himself a product of the Soviet military, surrounded himself with former members of the security forces, so he understood the methods and tactics of his adversaries quite well.
- He commanded Chechen volunteers in the "Abkhaz Battalion" in Abkhazia, a region that violently broke away as a *de facto* independent state from Georgia in 1992-1993.
- Between 1994 and 1996, Basaev served as a front line commander in the First Chechen War, fighting fiercely to resist Russia's takeover of Grozny, the capital of the Chechen Republic. He was promoted to General and Commander of the Chechen armed forces in 2006, after which he succeeded in driving the Russian forces out of Grozny, ending the first Chechen-Russian war.

Both experts agreed that the availability of resources—money, weapons, and smugglers—as well as the widespread bureaucratic corruption gave Basaev an ideal environment to innovate and succeed in otherwise improbable operations.

- Prior to the commencement of the second Chechen-Russian war in 1999, Basaev supplemented his regional militant network with a transnational one led by the Saudi-born Emir Khattab. The latter gave him access to Arab foreign fighters as well as funding channels from the Middle East.
- The duration of the armed conflict has created a Chechen society accustomed to war, creating a vast pool of potential militants with arms.
- Corruption enabled Chechen rebels to bribe their way past checkpoints, purchase arms from poorly-paid conscripts, and even circumvent airport security measures, which made possible

the destruction of two airplanes in 2004. Corruption, noted Dr. Rasmussen during an intervention, creates a “legal safe haven” just as important as a geographical one.

Both experts pointed out that Basaev was also open to new ideas and had high tolerance for risk. A war culture also created high tolerance for revenge and bloodshed, which helps explain the spectacular operations against civilians, including children, using what appears to be willing martyrs. Mr. Jayasekara also noted the brutality of the conflict and its linkage to cruel insurgent violence in the LTTE case study.

When it came to suicide attacks, Dr. Moore argued that three waves of suicide attacks (June 2000-June 2002; December 2002-August 2004, and August 2008-present) were directly linked to the diminished capacity of Chechen rebels to mount military operations against Russia’s federal forces. Contrary to the conventional wisdom, promoted by Russian propagandists, “martyrdom operations” were not a product of Wahhabi-inspired foreign importation. Local groups who lost their ability to fight successfully a conventional guerrilla war organized these suicide attacks, both experts explained.

SECTION 8: MISSING INNOVATIONS: THE FARC AND LOYALISTS

The Revolutionary Armed Forces of Colombia (FARC), a hierarchical and resource-rich leftist guerrilla organization that has been in control of vast territories over its five decades of existence, does not seem too interested in innovation, certainly not in weapons of mass effect. The absence of innovation in the FARC is puzzling given that it has little moral inhibition against targeting civilians and seems to exhibit many of the organizational features of terrorists that did innovate. Similarly, Protestant terrorist organizations in Northern Ireland (known collectively as Loyalists), which killed over 1,000 people (mainly Catholic civilians) between 1969 and 2002, were equally uninterested in innovation, this despite the fact they were in competition with each other as well as with the highly innovative Irish Republican Army (IRA). Loyalist paramilitaries resemble the extreme right wing movement in the U.S., except perhaps in their intent to use weapons of mass effect. What explains this lack of interest in terrorist innovation?

Participants and Objectives

Prof. Peter Waldmann, University of Augsburg, and Prof. Jonathan Tonge, University of Liverpool, explained the puzzling absence of innovation among the FARC and Loyalist paramilitaries, respectively. Both noted that the counterfactual nature of the question—why no innovation?—makes it difficult to offer definitive explanations. However, each pointed to a number of plausible factors rooted in the structure of the conflicts and political alignments in Colombia and Northern Ireland. Dr. Maria Rasmussen, Naval Postgraduate School, chaired this panel.

Discussion and Findings

Revolutionary Armed Forces of Colombia – FARC

Prof. Waldmann highlighted several structural factors that obviate the need for innovation within the FARC. Firstly, Prof. Waldmann argued that the political culture in Colombia hinders acceleration or escalation of the conflict. There is a strong orientation toward pacts and negotiated equilibria, he explained, “not toward the elimination of the adversary.” In addition, the Colombian state does not exercise a monopoly over the means of coercion. Violence in Colombia is used widely for private as well as political gains.

The FARC is not purely an ideological movement willing to do anything to achieve its aims, maintained Prof. Waldmann. The organization is also (and has been for a quarter century) vigorously involved in the illegal economy -- drugs, racketeering, kidnapping for ransom, and so on. Over the years, FARC has seen its more innovative rival, the urban terrorist group April 19th Movement (M-19), engage in spectacular attacks such as the seizure of the Palace of Justice in 1985. With these terrorist spectacles, M-19 went beyond the unspoken but very clear limits on the violence that Colombian civil society will tolerate. The FARC understands this. It is not in the organization's interest to contemplate any action that would affect its bottom line. Undue escalation through the use of WMEs might threaten this environment that benefits the FARC and its local population alike. Why “kill the goose that lays the golden egg?” asks Prof. Waldmann.

- In the late 1990s the income of the FARC, stemming mostly from kidnappings and drug trafficking, was estimated to be around \$600 million annually. This money allows the FARC to buy modern weapons, pay generous bribes, establish a network of spies and informants,

- and pay their guerrilla army salaries.
- The FARC has developed the kidnapping industry to perfection, establishing tight relations with informants, urban banks, and insurance employees. This elaborate war economy has many beneficiaries with vested interest in maintaining the status quo, which in turn militates against an abrupt departure from a low intensity conflict through the use of WMEs.

Another structural condition that makes innovation unlikely is the nature of the FARC and its peasant social base. Peasants have a “conservative mindset that is not tolerant of excessive risk and experimentation,” according to Prof. Waldmann. Moreover, secure in its vast rural territories, the FARC views time as being on its side. There is no need to escalate and speed up the historical process leading to revolutionary change.

Loyalists in Northern Ireland

When it came to explaining the lack of innovation between the two main Loyalist paramilitary organizations in Northern Ireland (the Ulster Volunteer Force or UVF and the Ulster Freedom Fighters or UFF), Prof. Tonge began by noting that unlike the IRA, which fought an offensive war to drive the British out of Northern Ireland, the Loyalist paramilitaries fought a “defensive” pro-state war to maintain the status quo. Therefore, they felt less of an urgent need to escalate through innovative violence because the security forces (the police, army, and intelligence services) were already carrying the bulk of the effort to defeat the IRA. The Loyalists simply wanted to deliver two messages through their violence:

- There will be a civil war in Northern Ireland if the British withdraw.
- Those who support the IRA will face dire consequences.

These two objectives could be met with levels of violence that fall short of WME attacks. Most of the Loyalists' operations involved killing Catholic civilians and bombing or shooting up pubs in Catholic neighborhoods. A number of other factors also help explain the lack of innovation among Loyalist paramilitaries:

- Difficulty in procuring weapons due to the absence of state sponsorship and international financing (the IRA had plenty of both).
- Difficulty in identifying a clear enemy among the Catholic community of Northern Ireland since the IRA operated as an underground organization.
- Community policing and lack of Protestant public support for Loyalist violence, since this support generally went to the British forces, not the irregulars.
- Absence of a safe haven in which to experiment and develop weaponry.

Prof. Tonge went on to highlight three features of the Loyalist paramilitaries that are acutely similar to those of America's extreme right movement.

Demographics – the Loyalists drew their members from the lower socio-economic strata. Many of its members had little education and a “tendency towards criminality, especially racketeering and drug-dealing.” Even their leaders, explained Prof. Tonge, “were seen as gangsters and/or drunks with little talent other than to coerce.”

Infiltration – the Loyalists, like the extreme right in the United States, were easily penetrated by the security services. The state did not hesitate to manipulate the legal system, in this

case by conducting “supergrass” trials in which dozens were convicted on the testimony of one informer. (Those convictions were eventually reversed).

Rivalry – Intra-Loyalist competition prevented collaboration and merger of resources, but instead descended into feuds over territorial control and racketeering. As Prof. Tonge explained, personal aggrandizement displaced the Loyalists’ capacity for adaptation.

Perhaps just as important is the fact that one of the Loyalist groups operated as a legal entity until 1992. In addition, both Loyalist groups colluded with the British authorities in targeting the IRA. Any escalation in violence that would embarrass the British authorities threatened the paramilitaries’ legal status and their extra-legal collusion with the British security services.

SECTION 9: CONSIDERATIONS FOR FUTURE RESEARCH

During the concluding session, workshop participants reflected on the lessons they derived from the two-day meeting. It was generally agreed that key themes that emerged in Phase I (2010) had also become relevant to the discussion of Phase II (2011) cases. In particular, innovation appeared consistently as the product of crises and problem solving. Terrorist groups that are not on the run, battling government repression, or in need of fresh political initiatives, are much less likely to innovate. This second workshop also confirmed the key role that resources play in terrorist innovation—not only financial resources, but also technical knowledge. New important resources appeared in Phase II, in the form of diaspora contributions and safe havens. Finally, Phase II confirmed the central importance of leadership in the process of innovation.

Participants and Objectives

In this panel, Prof. Charles Townshend, Keele University, and Mr. David Hamon, DTRA, shared their impressions on the key themes that developed during the workshop, and posed a number of questions to the assembled subject matter experts as a way to open the discussion. Prof. Richard English, Centre for the Study of Terrorism and Political Violence at the University of St. Andrews, chaired the panel.

Discussion and Findings

Discussion focused to a large extent on whether the workshop could yield a list of predictive indicators of terrorist innovation. Experts were split on this question. Some argued that we need a narrower focus, with more rigorous definitions of terms such as “innovation” and “WME” that would make cases more comparable, and findings more conclusive. Others argued the opposite: a focus solely on WMDs as opposed to WMEs would be unduly limiting because most terrorist innovation takes place below the WMD threshold.

Some participants believed it is possible to generate indicators of terrorist innovation. For example:

- The group’s messaging to its supporters could reflect its interest in using escalatory weapons and new technologies for nefarious purposes.
- The group’s strategy, capabilities for escalatory violence, and its leader’s ambitions and appetite for risk could signal the potential for innovative terrorism.
- The group’s access to advanced technology, scientific expertise, or suppliers of weapons of mass destruction could lay the groundwork for escalatory terrorism.

Others argued that these indicators are useful, but they would not be able to envisage the specific direction of innovation. Moreover, prediction might be possible in the case of individual terrorist groups, not in the case of terrorism in general.

Experts raised a number of questions for further consideration: Why do terrorists show a predilection for some attacks over others? Why do some targets become iconic? We have documented the general terrorist fascination with airplanes, Aum Shinrikyo’s obsession with chemicals, or Basaev’s fixation on mass hostage taking, but this attachment to a target set remains largely underexplored. One recommendation was that we should consider the study of terrorist targeting as a follow-on project.

A second recommendation involved a different focus: the terrorists themselves. Experts suggested that we should concentrate on the terrorists in order to understand the decision-making processes within their groups. Specifically, we could draw on terrorist memoirs and interviews, or even create simulation exercises involving former terrorists and experts in which both groups respond to a scenario. The object of the exercise would be to observe at what point the participants feel the need to escalate and resort to WMDs. The overall goal of the research would be to observe how the terrorists articulate the discussion about innovation, and to uncover restraints on their actions, whether the terrorists are aware of these or not.

Experts urged us to examine the assumptions that terrorists make about the likely impact of their actions on publics, and especially on governments. We also need to know about the lessons that terrorists learn when they observe the behavior of other terrorists. Finally, experts noted that there are no extant models to explain the diffusion of terrorist innovation. We should seize this opportunity to investigate how terrorist innovation spread from one organization to another now that we have a better understanding of how innovation emerges in the first place.

The following appendices include selected research papers written by the workshop organizers and participants.

APPENDIX I: M. RASMUSSEN AND M. HAFEZ, INNOVATION IN WME TERRORISM: A GUIDE FOR WORKSHOP PARTICIPANTS

For the second year in a row, the Defense Threat Reduction Agency (DTRA) is sponsoring a workshop to discuss innovation in terrorism. This white paper outlines the project's objectives and the definitional and conceptual issues surrounding terrorist innovation. It should serve as a guide to all participating scholars as they prepare their papers and workshop presentations for the University of St. Andrews meeting. We have divided this paper into the following sections:

1. A background to this project which outlines how the research was structured last year, and how we plan to focus discussion this coming October.
2. A section that defines the term "weapons of mass effect." All cases discussed in Phase I fell under this rubric, as do most of the cases that we will discuss in Phase II this October.
3. A section that defines what we consider to be innovation in terrorist organizations.
4. A section outlining the questions and issues we would like you to consider as you prepare your papers and presentations. In Phase I we were very fortunate in that all scholars followed this section rigorously. Our discussion was therefore broadly comparative and allowed us to observe how different factors played out across terrorist groups and across different decades. Our goal for Phase II is to encourage informed dialogue across cases with the aim of generating new insights and synthesis, building on the findings from the previous study.

Project Background

In 2010, in Phase I of this project, DTRA invited experts to analyze seven incidents of terrorist innovation:

1. Airline hijackings by the Popular Front for the Liberation of Palestine (PFLP) between 1968 and 1972.
2. The 1973 assassination of the Spanish Prime Minister Luis Carrero Blanco by Euskadi Ta Askatasuna (ETA).
3. The 1984 attempted assassination of British Prime Minister Margaret Thatcher by the Irish Republican Army (IRA).
4. The 1995 sarin gas attack on the Tokyo subway by the Aum Shinrikyo cult.
5. The 1995 Oklahoma City bombing by Timothy McVeigh.
6. Al-Qaeda's September 11, 2001, attacks on the United States.
7. The July 7, 2005, bombings of the London Underground and bus system by a cell of radicalized British Muslims with links to militants in Pakistan.

The invited experts assessed the preconditions, causes, and preparatory behaviors associated with terrorist innovation. The objective was to generate predictive indicators that could help counterterrorism specialists in law enforcement and the intelligence community respond to emergent advances in the use of weapons of mass effect (WME). The findings from Phase I of this study are included in a separate report. One of the key recommendations from that study was the need to expand our research focus in three interrelated directions.

First, last year's meeting suggested we widen the focus of our analysis by looking not only at specific incidents of innovation but also at campaigns by groups that have been particularly innovative over time. Following that recommendation, in Phase II we will discuss two additional incidents, the 1972 hostage taking of eleven Israeli athletes at the Munich Olympics by the Palestinian Black September Organization, and the delivery of Improvised Explosive Devices in Afghanistan after 2001. We will also look at innovation within two separate groups over time, the Liberation Tigers of Tamil Eelam (LTTE) since 1976, and the Chechen campaigns against Russia since 1999. Finally, because innovation appears to be an incremental process, involving gradual learning and adaptation, we will look at the evolution of airline bombings over time.

A second suggestion that emerged from our first workshop was that we should look not only at successful innovation, but also at cases where the terrorists attempted to innovate but could not bring their efforts to fruition (failed innovation), or were thwarted in their efforts (foiled innovation). Looking at failed and foiled innovations will enable us to understand the obstacles that stand in the way of innovation, and will allow us to derive lessons for counterterrorism. In Phase II, we will discuss three failed or foiled plots: the Bojinka plot of 1995, in which Ramzi Yousef attempted to blow up eleven airplanes over Southeast Asia, Al Qaeda's several attempts to develop a chlorine bomb in Iraq in 2006-07, and the various attempts by right wing terrorists in the United States to develop chemical or biological weapons since the 1990s.

A third recommendation which emerged out of our first workshop was that we should analyze why some terrorist groups do not seek to innovate, even when they appear to have the same objectives, resources, and organizational structures which have favored innovation in other cases. In Phase II, we will look at the Revolutionary Armed Forces of Colombia (FARC), a hierarchical and very wealthy organization that also controlled portions of the national territory over decades but did not seem too interested in innovation. We will also look at the two Protestant terrorist organizations in Northern Ireland, the Ulster Defense Association (UDA) and the Ulster Volunteer Force (UVF), which were in competition not only with each other but also with the highly innovative IRA, and yet confined themselves to a repetitive repertoire of actions.

In Phase I, we invited two experts to write papers and make presentations on each of the seven incidents of innovation under study. Our hope was that competitive explanations would enrich the final analysis, and clearly the participants agreed this had been the case. For Phase II, we maintained the structure of competitive analyses for all the new incidents and campaigns we will discuss at the University of St. Andrews, but not for the failed and foiled plots. In this case, we felt we should strive for greater breadth.

The choice of cases is driven by a number of considerations. First and foremost, we want to break out of the current focus on radical Islamist movements. The current threat emanating from violent Islamist extremists has produced a near myopic concentration on the dynamics of this movement. Innovation in terrorism is a universal process that warrants comparative regional and group analysis. Given our interest in developing broader models of innovation, we think there are many lessons to be drawn from earlier waves of terrorism. These earlier cases offer an advantage because they have receded from the headlines. These historical cases can be studied with greater objectivity, and accessibility to a wealth of relevant sources, including terrorist memoirs and oral history, trial records, extensive investigative journalism, and government reports.

An equally relevant consideration is variation on cases. The cases we have selected provide us with a variety of attack types: hostage taking, mass casualty bombings, suicide attacks, airline bombings, IEDs, and chemical attacks. In addition, we are selecting cases that exhibit successful and failed innovations, as well as ones with no interest in innovation. This variation allows us to test variables that purportedly contribute to innovation by seeking out those variables in cases where innovation did not materialize. Finally, this selection of cases provides us with a spread across

different decades.

Some of the cases represent innovation by established hierarchical organizations like the LTTE; others by networked organizations and groups like the Chechen rebels, Al-Qaeda in Iraq and the Taliban insurgents in Afghanistan. Some cases involved complex coordination and operational planning (the Bojinka plot) while others did not require high levels of complexity (the chlorine bombs). Some of these cases were not just innovative in their tactics per se, but did constitute a strategic innovation because of the choice of symbolic targets (Munich 1972). Others were awe-inspiring because they represented completely new repertoires of action (the Bojinka plot). Given our interest in contexts of innovation, we think these cases that span several regions, time periods, and ideological motivations can help us understand how political, technological, and normative environments can shape the dynamics of innovation.

How do we define weapons of mass effect?

The Homeland Security Advisory Council (HSAC) defined WMEs as “weapons capable of inflicting grave destructive, psychological and/or economic damage” (HSAC, 2006: 10). A DTRA-sponsored study followed a similar approach but refined it further. It outlined at least six dimensions of a terrorist attack, any one of which would result in mass effects (Yengst, 2008: [2-5] 4, 5):

1. At least 1,000 fatalities.
2. A large area devastated – 10 square miles in rural areas, and one square mile in urban settings.
3. Damage or destruction to at least one critical facility, be it a power plant, government center, transportation hub or control system.
4. A loss of at least \$10 billion to the economy of the United States or another major power, with smaller financial burdens in developing nations.
5. A significant (but undefined) interruption in services, industries or quality-of-life functions.
6. A manifest “degree of terrorism” – a qualitative, subjective but nevertheless present psychological and/or emotional impact on the population.

We would lower the fatality threshold since we feel the figure of 1,000 is excessive. We searched the Global Terrorism Database managed by the National Consortium for the Study of Terrorism and Responses to Terrorism (START) and found a total of 111 terrorist incidents with over 101 fatalities. Of these, 41 took place during the civil wars of the 1980s and 1990s in El Salvador, Nicaragua, Rwanda, Angola and Mozambique, and 12 took place in Iraq after 2003. Only 2 incidents resulted in 1,000+ fatalities: September 11th and a Hutu attack on the Tutsis during the Rwandan conflict, which we consider to be an act of genocide distinct from traditional definitions of terrorism. One attack in Nepal resulted in 518 fatalities, but this was a conventional attack by Maoist guerrillas against government forces in the town of Bedi, and it was the guerrillas who suffered 500 of the total 518 fatalities. Two attacks (one of which is also connected to the Rwandan conflict) resulted in 400+ fatalities, and all other incidents resulted in 400 fatalities or less. Only 27 incidents not connected to the civil wars mentioned above resulted in 150-400 fatalities. Therefore, we would lower the threshold to 100 fatalities. This does not seem too low, considering that other scholars work with a figure of 25 (Quillen, 2002: 280-82).

We also realize that points 4-6 are difficult to quantify and must therefore be evaluated subjectively. Property damage may be quantified, and to some extent, so can the loss of “human capital.” It is more difficult to quantify security-related expenditures, or long-term effects on the economy (Hewitt, 1993: chapter 2). The evaluation of psychological effects is fraught with problems.

A logical assumption is that popular concerns about terrorism are directly related to the level of terrorist violence. This seems to be verified in the case of opinion surveys after Oklahoma City and September 11th (Hewitt, 2003: 109-100). However, we know of at least one case, Spain, where the perceptions of the terrorist problem seem unconnected to the intensity of the terrorist violence (Hewitt, 1992: 182). In addition, individual stress or psychopathology following a terrorist incident will be influenced by a veritable host of factors (Sprang, 2003: 135-38), and it is also difficult to measure the psychological effects of different types of terrorist operations. Since 9/11, political psychologists have linked evidence of PTSD to the scale of the operation, and our media exposure to it (Melnik, 2002; Cohen Silver, 2002), but there is ample evidence that ETA and the IRA expected to provoke a major psychological effect with one individual assassination, that of a head of government (McGladdery, 2006: 125-140; Agirre, 1975). These may be some of the factors that led Martha Crenshaw (2000: 406) to point out that the study of the psychology of terrorism hadn't advanced much in a decade.

How do we define innovation in terrorism?

The study of innovation in terrorism is not new, but it is hardly systematic, comparative, or oriented toward theory building. There is only one book-length study on this topic (Dolnik, 2007); other scholarly claims about innovation in terrorism are usually embedded within broader studies on terrorist tactics, strategies, and motivations. As a result, there is hardly an explicit scholarly dialogue, much less consensus, on this important issue.

Frequently, terrorism scholars use the term “innovation” without attempting to define it. Among those who do, Dolnik calls it “the adoption of a tactic or technology that the given organization has not used or considered using in the past. This can take the form of the introduction of a weapon or tactic that is entirely new, or that has already been used by other organizations in the past” (Dolnik, 2007: 6). Martha Crenshaw adopts a similar definition of innovation – “the adoption of new patterns of behavior” (Crenshaw, 2001: 3) – and broadens the scope further by distinguishing between strategic, tactical and organizational innovations.

Strategic innovations are game-changers, according to Crenshaw, because they involve the development of new objectives for the terrorist organization, and therefore of different operations to reach those objectives. Strategic innovation involves significant shifts in how groups frame their goals, and may thus require new forms of violence, target sets, or audiences to influence. One familiar strategic innovation was Al-Qaeda's shift from aiding insurgencies against “near enemies” (secular regimes in the Muslim world) to attacking the “far enemy” (Western countries). Crenshaw lists several cases of strategic innovation: the Irgun's campaign against British authorities in Mandate Palestine in the 1940s; airline hijackings in the 1960s; Hizballah's campaign of suicide bombings in the 1980s; and Aum's sarin attack in 1995 (Crenshaw, 2001: 5-6).

Tactical innovation involves significant shifts in technologies and techniques of terrorism without a concomitant change in objectives. Crenshaw avers that changes in weapons or targets happen more frequently in the life of terrorist organizations than does a fundamental strategic shift. Among the examples she offers are the murder of Count Folke Bernadotte in 1948, the first time an international mediator was murdered, or the IRA's switch from attacking Ireland to attacking the British mainland. Organizational innovation involves new ways of structuring the terrorist group or inventive methods to reach new recruits.

In this project we follow Crenshaw's definition of innovation, which is to say that *we deem as innovative any strategy, tactic, or organizational method that constitutes a departure from earlier patterns of behavior for a given terrorist group. We assume that this departure could come about dramatically or gradually, and it may be planned or serendipitous.* At the same time we recognize that there are issues that the literature has never

clarified. Is there a difference between innovation and adaptation? Some use both terms as synonyms (Jackson, 2006: 161). Others seem to argue that terrorist innovation involves a series of adaptations to changing circumstances, most notably government policies (Faria, 2006: 47-8; Crenshaw, 2000: 416). Finally, others seem to be saying that adaptations occur continuously in the life of terrorist organizations and are always gradual, whereas innovations represent major breakthroughs in experimentation and development (Jackson, 2001: 203).

Another question left unanswered in the literature is: Can innovation occur without escalation? Faria (2006: 54) and Morgan (2008: 123) assume that terrorist innovation will bring escalation, and Crenshaw (2001: 3, note 6) states that innovation need not involve escalation, but does not discuss it further. Though it is possible to conceive of terrorist innovation without escalation, in the context of this project, and given our definition of WMEs above, we would argue that innovation in the direction of WME terrorism would almost inevitably involve escalation. Our goal, however, is not to close the debate completely over these conceptual disagreements. It may well be that close examination of the different cases and the analytical presentations lead us to a reappraisal of the relationship between adaptation, innovation and escalation.

What are the critical variables we would like you to explore?

It is important to go beyond the mere narration of details surrounding past episodes of innovative terrorism; the goal of this project is to think analytically and systematically about the underlying factors—the critical drivers—that brought these tactical and strategic innovations to fruition. To that end, we are asking the participating researchers to use the questions and issues raised below as a guideline for the analysis of their individual case in order to generate focused and structured comparisons across cases. Broadly speaking, we are asking all participants to address three general questions:

1. What motivates terrorists to innovate and how does innovation come to fruition?
2. What determines the success and failure of terrorist innovations?
3. How can we anticipate the trajectory of terrorist innovation over time?

Whether you are discussing a specific incident, a failed or foiled incident, a campaign, or an absence of innovation, we ask that you attempt to address *preconditions*, *causes*, and *preparatory behaviors*.

Preconditions

Preconditions are those characteristics of terrorist organizations and of the environment in which they operate which make innovation more or less likely. For example, researchers have pointed out that among the Aum Shinrikyo cadre, there were a significant number with highly technical or scientific university degrees (Kaplan and Marshall, 1996: 2-3, 26-8, 77-8, 296-7). The existence of personnel with the requisite scientific knowledge would help any terrorist organization solve complex technical problems. When we talk about preconditions, we are thinking of trends or structural factors evolving over time.

What are the leadership and organizational requirements for innovation? Are certain types of organizations more likely to innovate than others? Is innovation driven by leaders atop the organizational hierarchy or by aspiring terrorist entrepreneurs outside of the core leadership? For example, Tucker argues that “entrepreneurial leadership is the key to understanding terrorist innovation”, and believes that entrepreneurs are more likely to appear in small and newly formed groups than in large, established organizations (2000: 13; see also Crenshaw, 2001: 16-19). Jackson (2001: 201), by contrast, argues that resources

will facilitate innovation, and therefore, financially robust organizations like the IRA or Hizbullah, are more likely to innovate. Along similar lines, de la Calle and Sánchez Cuenca argue that “the capacity for killing is directly related to the resources the organization has, and resources depend on popular support” (De la Calle and Sánchez Cuenca, 2006: 17, see also 26).

Did the structure of the organization shape in any way the pace of innovation or the receptivity to it? Jackson (2006: 161) argues that organizational characteristics such as the group’s capacity to learn, technological awareness, openness to new ideas, and attitude toward risk influence its ability to innovate, and that larger organizations would therefore be in a better position to innovate. Along similar lines, Dolnik (2007: 150-52) shows that organizations with a safe haven or territorial stronghold are more likely and/or willing to innovate, and Tucker (2000: 8) avers that domestic terrorist organizations will be less likely to innovate, presumably because they’ll be able to count on fewer resources.

Causes

Causes are those factors that directly influence the group’s decision to innovate. These may include new security environments, factional competitors, or a new strategic direction that requires an escalation in the violence. We are not concerned here with the general causes of the violence, in other words, with the factors that precipitated the launch of the terrorist organization or the terrorist campaign. Rather, we are more narrowly concerned with the direct precipitants of change, in tactics or strategy.

Causes of innovation internal to the terrorist organization

C.J.M. Drake argues that, though a variety of factors explain the terrorists’ target selection, the ideology of the group is of paramount importance in interpreting the world, defining the enemy and targeting it. Dolnik followed along similar lines by arguing that changes in the group’s worldview will provoke a will to innovate (Drake, 1998: 54, 56, 78; see also Dolnik, 2007: 146-150). Moghadam (2008) makes the case that a particularly virulent form of Sunni Islamism—Salafism—was the key driver behind Al-Qaeda’s widespread use of suicide terrorism against Western civilians and their coreligionists.

Beyond ideology, we would like you to think about the internal dynamics of the terrorist organization you are discussing. Twenty years ago, Crenshaw argued that organizational forces were more likely to explain the behavior of terrorist groups than ideology or stated strategy (Crenshaw, 1985 and 1988). In particular, two organizational issues might drive innovation. The first would be the existence of factionalism within the group. The second would be the existence of a rival terrorist organization that is disputing territory or supporters. In either case, innovation might be a way to exercise control or dominance over organizational rivals (see also Bloom, 2004).

Causes of innovation external to the terrorist organization

Do governments unwittingly encourage innovation, and if so, in what way? Faria (2006: 47, 54), Jackson (2006: 165), Dolnik (2007: 152ff) and Byman (2007: 134) argue that counterterrorist strategies drive innovation as terrorists seek to circumvent new security procedures. Enders and Sandler (1993) show that security measures can lead to terrorists substituting tactics and targets. Jackson and Trujillo (2006: 62) in turn state that it is the environmental uncertainty, defined as not knowing what the security forces will do next, that will drive the process. Morgan et. al., (2008: 118) state that in a conflict with insurgents, the state will frequently escalate first in the push for victory,

and that this will in turn push insurgents to escalate also.

Does civil society encourage innovation? Here we are thinking of normative contexts that may inhibit or encourage deadly forms of innovation. Waldmann (1982, 213-19), for example, has argued that in Argentina, the decade that preceded the emergence of the Montoneros and People's Revolutionary Army (ERP) terrorist organizations was one in which societal norms relaxed, political antagonism was rife, and violence became more acceptable socially, which in turn made the decision to turn to terrorism easier. Hafez (2007) argued that the widespread use of suicide attacks in Iraq was in part driven by earlier Muslim clerical support for this tactic against Israel.

Preparatory Behaviors

Once the group has decided it wishes to innovate, there may be activities that the group needs to undertake in preparation, observable behaviors or conducts. In the case of Aum Shinrikyo, for example, prior to the subway attack the Japanese police had received reports from the neighbors that a distinct smell was emanating from the Aum compound. Had the police acted promptly on this information, it might have interrupted the workings of Aum's laboratory (Kaplan and Marshall, 148-49).

Looking back, would it have been possible for counterterrorism specialists to observe and connect together the developments that made innovation possible? What indicators would have enabled security specialists to anticipate the trajectory of innovation in your case? Since 9/11, many analysts have argued about the importance of intelligence in counterterrorism, and especially about human intelligence. In some cases, notably Israel and Northern Ireland, human intelligence in the form of informants or agents within terrorist organizations has allowed the security forces to foil plots and prevent deadly attacks (Horowitz, 2004; Geraghty, 2000: especially Chapter 9; Dillon, 1999: chapters 12, 14). Such penetration of terrorist groups is not always possible. But once the terrorist group has decided to innovate, a number of actions may alert law enforcement personnel that something is about to happen. There are cases when terrorist organizations must commit common crimes as they prepare for a terrorist atrocity. But the group may simply need to move weapons, bombs or personnel from one point to another, and in the process, attract attention from law enforcement or from alert citizens, which is what happened with several of the 9/11 hijackers (National Commission on Terrorist Attacks, 2004: chapter 7).

Final Considerations and Questions

We realize that there are differences among the cases we will discuss at the University of St. Andrews, and those differences will influence the writing of your individual papers. Some of you are looking at concrete incidents of innovation, and will be able to address most of the issues and questions we raised above. Some of you are looking at failed or foiled innovation. You will want to explain why the innovation failed to materialize or failed to achieve its objective, and you may even be able to discuss competing or alternative explanations of that failed or foiled innovation. In addition, if you are discussing a case of failed or foiled innovation, you will be able to talk about preconditions and causes, but you may or may not be able to talk about preparatory behaviors. Finally, some of you are discussing entire campaigns, by an individual terrorist organization or by nebulous networks. If you are discussing a campaign, we ask that you focus on the most salient innovations (strategic, tactical or organizational) in the history of the group(s) that you are discussing.

References

- Agirre, Julen, *Operation Ogro. The Execution of Admiral Luis Carrero Blanco* (New York: Quadrangle, 1975).
- Bloom, Mia, "Palestinian Suicide Bombing: Public Support, Market Share and Outbidding," *Political Science Quarterly*, 119: 1, Spring 2004, 61-88.
- Byman, Daniel, "US Counterterrorism Options: A Taxonomy," *Survival*, 49: 3, Autumn 2007, 121-150.
- Cohen Silver, Roxana, et al., "Nationwide longitudinal study of psychological responses to September 11", *Journal of the American Medical Association*, 288: 10, 2002, 1235-1245.
- Crenshaw, Martha, "Innovation: Decision Points in the Trajectory of Terrorism," paper presented at the conference "Trajectories of Terrorist Violence in Europe," Harvard University, March 2001.
- , "The Psychology of Terrorism: An Agenda for the 21st Century," *Political Psychology*, 21: 2, 2000, 405-20.
- , "Theories of Terrorism: Instrumental and Organizational Approaches," in David C. Rapoport (ed.), *Inside Terrorist Organizations* (New York, NY: Columbia University Press, 1988).
- , "An Organizational Approach to the Analysis of Political Terrorism," *Orbis*, 29: 3, 1985, pp.465-89.
- De la Calle, Luis, and Ignacio Sánchez Cuenca, *The Production of Terrorist Violence: Analyzing Target Selection within the IRA and ETA* (Madrid: Juan March Institute, Estudio/Working Paper 2006/230, December 2006).
- Dillon, Martin, *The Dirty War: Covert Strategies and Tactics used in Political Conflicts* (New York, NY: Routledge, 1999).
- Dolnik, Adam, *Understanding Terrorist Innovation* (London and New York: Routledge, 2007).
- Drake, C.J.M., "The role of ideology in terrorists' target selection," *Terrorism and Political Violence*, 10: 2, Summer 1998, 53-85.
- Enders, Walter, and Todd Sandler, "The effectiveness of anti-terrorism policies: A vector-Autoregression-intervention analysis," *American Political Science Review* 87: 4, 829-844.
- Faria, João Ricardo, "Terrorist Innovations and Anti-Terrorist Policies," *Terrorism and Political Violence*, 18, 2006, 47-56.
- Geraghty, Tony, *The Irish War* (Baltimore and London: The Johns Hopkins University Press, 2000).
- Hafez, Mohammed M., *Suicide Bombers in Iraq: The Strategy and Ideology of Martyrdom* (Washington, DC: United States Institute of Peace, 2007).
- Hewitt, Christopher, *Understanding Terrorism in America. From the Klan to Al Qaeda* (London and New York: Routledge, 2003).
- , *Consequences of Political Violence* (Aldershot: Dartmouth, 1993).
- , "Public's Perspectives", in David L. Paletz and Alex P. Schmid (eds.), *Terrorism and the Media* (Newbury Park, California: Sage Publications, 1992).
- Homeland Security Advisory Council, *Weapons of Mass Effect Task Force on Preventing the Entry of Weapons of Mass Effect into the United States*, January 2006.
- David Horowitz, *Still Life with Bombers: Israel in the Age of Terrorism* (New York, NY: Alfred A. Knopf, 2004).
- Jackson, Brian A., "Organizational Learning and Terrorist Groups," in M. Leann Brown, Michael Kenney, and Michael Zarkin (eds.), *Organizational Learning in the Global Context* (Aldershot, England: Ashgate Publishing, 2006).
- , "Technology Acquisition by Terrorist Groups: Threat Assessment Informed by Lessons

- from Private Sector Technology Adoption,” *Studies in Conflict and Terrorism*, 24, 2001, 183-213.
- , and Horacio Trujillo, “Organizational Learning and Terrorist Groups,” in James J.F. Forest (ed.), *Teaching Terror. Strategic and Tactical Learning in the Terrorist World* (Oxford: Rowman and Littlefield, 2006).
- Kaplan, David E., and Andrew Marshall, *The Cult at the end of the World* (New York, NY: Crown Publishers, 1996).
- McGladdery, Gary, *The Provisional IRA in England. The Bombing Campaign 1973-1997* (Dublin: Irish Academic Press, 2006).
- Melnik, T. A., et al., “Psychological and emotional effects of the September 11 attacks on the World Trade Centre – Connecticut, New Jersey, and New York, 2001”, *Journal of the American Medical Association*, 288: 12, 2002, 1467-1469.
- Moghadam, Assaf, *The Globalization of Martyrdom: Al Qaeda, Salafi Jihad, and the Diffusion of Suicide Attacks* (Baltimore, MD: Johns Hopkins University Press, 2008).
- Morgan, Forrest E., et. al., *Dangerous Thresholds. Managing Escalation in the 21st Century* (Santa Monica, CA: Rand Corporation, 2008).
- National Commission on Terrorist Attacks upon the United States, *The 9/11 Commission Report* (New York and London: W.W. Norton, 2004).
- Quillen, Chris, “A Historical Analysis of Mass Casualty Bombers,” *Studies in Conflict and Terrorism*, 25, 2002, 279-292.
- Sprang, Ginny, “The Psychological Impact of Isolated Acts of Terrorism,” in Andrew Silke (ed.), *Terrorists, Victims, and Society* (Chichester, England: John Wiley and Sons, 2003).
- Tucker, David, “The Future of Armed Resistance: Cyberterror? Mass Destruction?” Final Report of a Conference held May 15-17, 2000 at the University Panthéon-Assas (Paris II).
- Waldmann, Peter, “Anomia Social y Violencia,” in Alain Rouquié (ed.), *Argentina, Hoy* (Buenos Aires: Siglo Veintiuno Editores, 1982).
- Yengst, William C., “Part 5: Next Generation Weapons of Mass Effects,” in Lewis A. Dunn, Jennifer Perry et.al., *Next Generation Weapons of Mass Destruction and Weapons of Mass Effect Terrorism*, DTRA Report, January 2008.

APPENDIX II: A. MERARI, 1972 MUNICH OLYMPICS HOSTAGE CRISIS

On September 5, 1972, at 4:30 AM, eight terrorists wearing track suits and carrying hand bags containing AK 47 assault rifles, Tokarev pistols and hand grenades, climbed over the fence surrounding the Olympic Village in Munich and made their way directly to the apartments where members of the Israeli athletic team stayed. The terrorists broke into the apartments, killing in the process two Israeli athletes who tried to prevent them from entering. In the apartment, they seized nine Israeli athletes and coaches as hostages.

When Bavarian law enforcement officers arrived on the scene, the terrorists, members of the Black September Organization (BSO), demanded the release of 233 Palestinian prisoners by Israel and two others held in jail in Germany, and threatened to kill the hostages if their demands were not met. West German officials, who were aided by the Tunisian Ambassador to Bonn, Mahmud al-Mestiri, conducted negotiations with the terrorists. Israel refused to comply with the hostage takers' demands and also refused to allow the transferring of the hostage takers and hostages to Egypt.

The West German authorities devised a plan to rescue the hostages by a surprise assault. They led the terrorists to believe that they would be flown to Tunisia with their hostages. Two helicopters flew the terrorists and the hostages to the military airport of Fürstenfeldbruck, where a Boeing 727 was waiting for them on the tarmac. The German rescue team planned to shoot the hostage takers as they were walking from the helicopters to the Boeing airplane. German border police officers disguised as a flight crew were supposed to be waiting on board, so as to make the terrorists believe that the airplane was ready for takeoff.

The policemen, however, refused to risk their lives and left the plane. Furthermore, only two of the terrorists went to check the airplane while the other six remained in the helicopters with the nine hostages. Having checked the airplane, the two terrorists realized that there was no crew and the plane was not ready for flight. On their way back to the helicopters, the German police snipers opened fire. The terrorists returned fire, sprayed the hostages with bullets and threw hand grenades, which set the helicopters on fire. All nine hostages and one German police officer were killed. Five of the terrorists were also killed and the remaining three were arrested.

The bodies of the five dead terrorists were flown to Libya, where they were received in an official ceremony. On October 29, 1972, less than two months after the attack in Munich, two BSO members hijacked a German Lufthansa airliner en route from Beirut, Lebanon to Ankara, Turkey.¹ They demanded the release of the three surviving Munich terrorists. The hijacked airplane was flown to Zagreb, Yugoslavia. The West German government complied immediately and the three were flown to Zagreb, where they boarded the hijacked plane. The plane then was flown to Libya, where the terrorists received a heroes' welcome.

What is Innovative about the Munich Olympics Hostage Crisis?

The Munich attack was not the first barricade-hostage incident.² Neither was it the first incident in which terrorists carried out attacks outside their home country. Still, in terms of its

¹ The Arab National Youth Organization for the Liberation of Palestine, an offshoot of the BSO sponsored by Libya, claimed responsibility for the hijacking.

² On June 9, 1970, PFLP members took over the Philadelphia and Intercontinental hotels in Amman. They seized about 60 hostages, most of them Americans and Britons, and demanded that the Jordanian Army stop the shelling of PLO positions in refugee camps. The hostages were held for three days. In announcing their release, PFLP leader George Habash said to the hostages in one of the hotels: "Believe me – and I am not joking – we were determined to blow up

impact this was one of the most significant attacks in the history of modern terrorism. At the time it was carried out and for many years afterward the strike in the midst of the Olympic summer games was, by far, the most dramatic terrorist event, even though several other attacks claimed higher casualties. If the essence of terrorism as a mode of warfare is to create a psychological impact, then the Munich attack was unprecedented. The strike at the Olympic summer games – the most salient event with hundreds of millions of TV watchers and radio listeners around the world – was an amazing gambit to draw attention to the perpetrators' cause. Shocked by the Munich attack, governments around the globe hastily established hostage rescue units and negotiating teams.

The working definition of terrorist innovation, adopted by the workshop's organizers, reads:

[W]e deem as innovative any strategy, tactic, or organizational method that constitutes a departure from earlier patterns of behavior for a given terrorist group. We assume that this departure could come about dramatically or gradually, and it may be planned or serendipitous.³

By this definition, the Munich attack was the peak of a major (albeit temporary) change in the perpetrating organization's strategy. Until the defeat of the Palestine Liberation Organization (PLO) in Jordan in 1970-1971, Fatah, the main Palestinian resistance group, refrained from carrying out violent attacks outside Israel and the Occupied Territories. The adoption of international terrorism signified a major strategic change for Fatah and also involved organizational adaptations. For Fatah itself, therefore, the Munich attack was the climax of a process of innovation.

Causes of Innovation

After the 1967 Six-Day War, the Palestinian resistance groups' base of operations was in Jordan. The Hashemite Kingdom was the country that served the groups as a safe haven for recruiting, training and organizing. Jordan, with its long border with Israel, was also the main launching pad for terrorist and guerrilla attacks inside Israel and the Occupied Territories. Enjoying popular support throughout the Arab world, as well as the support of radical Arab countries, the Palestinian groups felt growing confidence in their power. They also enjoyed the support of the Palestinians in Jordan, which constituted the majority of the Jordanian population. Some of the Palestinian groups, especially the quasi-Marxist Popular Front for the Liberation of Palestine (PFLP) and the Popular Democratic Front for the Liberation of Palestine (PDFLP),⁴ called openly for the regime's overthrow in Jordan and the establishment of a radical Palestinian government instead. Palestinian forces increasingly challenged the Jordanian government's authority, creating a state within a state.

In September 1970, armed clashes between Palestinian groups and government forces erupted. Government forces prevailed by July 1971, when PLO forces were finally defeated in Ajlun and Jerash in northern Jordan after thousands of Palestinians were killed. All forces and organizational infrastructure of the Palestinian resistance groups were expelled from Jordan. The disaster in Jordan was a severe blow to the morale of Palestinians in general and members of the resistance groups in particular. In addition to the humiliation of being defeated, they suffered numerous casualties; some of them had families and homes in Jordan, and now they had to relocate

the hotels with the hostages in them if we had been smashed in our camps." Quoted in Lester A. Sobel, ed. *Political Terrorism* (New York: Facts on File, 1975), p. 34.

³ See Appendix I in this report.

⁴ The PDFLP later dropped the "popular" from its name and was called "Democratic Front for the Liberation of Palestine" (DFLP).

to other Arab countries.⁵ Moreover, having lost their bases in Jordan, the ability of the Palestinian groups to carry out attacks into Israel was severely curtailed.

The blow was particularly hard because the disaster and humiliation happened abruptly following a period of several years during which the Palestinian resistance groups and their members felt great pride because they were admired throughout the Arab world. Now, their honor and self-respect were shattered.⁶ Furthermore, there were indications that the weakening of the resistance movement began to corrode its status among the Palestinians in the Occupied Territories as the sole representative of the Palestinian people. Thus, in 1971 a group of local leaders in the West Bank and East Jerusalem called for the establishment of an independent Palestinian state in the Occupied Territories, contrary to the PLO's position, which insisted on a Palestinian state in the whole area of mandatory Palestine. This threat to the exclusive leadership position of the PLO was a cause of serious concern to the PLO. The worry was further exacerbated by the Israeli plan to hold municipal elections in the West Bank, thus threatening to create an elected Palestinian leadership independent of the PLO, as well as by King Hussein's suggestion in early 1972 to establish a United Arab Kingdom on both banks of the Jordan River.⁷

Under these circumstances, the leadership of the resistance groups and especially that of Fatah, the largest and most influential group, had to take whatever measures necessary to regain the initiative, restore the group's morale and, no less important, to salvage the resistance's image in the eyes of the Palestinian people. For these ends, the groups had to show that they were able to continue the struggle and even escalate it. But the ability to carry out incursions into Israel from Jordan was lost; Syria and Egypt did not allow the Palestinian groups to carry out cross-border attacks from their territory; and the massive Palestinian territorial base in Lebanon was not in place yet.⁸ With these constraints in mind, Fatah leaders decided to operate in an arena in which it had not operated before: the territories of neutral countries, mainly in Western Europe.

In his memoir, Salah Khalaf (better known as Abu Iyad), who was the head of BSO, explained the reasons for establishing the organization by saying that it acted as the resistance movement's ancillary force, at a time that the movement could not fully implement its military and political missions.⁹ He also explained: "Unable to continue the traditional guerrilla operations and penetrate Israel, [Fatah's young fighters] tended to engage in a different kind of revolutionary violence, that others describe by the general name of 'terrorism.' They wanted to harm not only the Zionist enemy, but also Arab murderers and traitors, who became Israel's helpers. To prevent the

⁵ Abdallah Franji, who served as the PLO representative in Bonn at the time of the Munich attack, wrote: "The defeat of July 1971 [in Jordan] brought the PLO to the verge of collapse. Not only were its military units defeated and fragmented but the political and social work of the previous three years was practically destroyed." A. Franji, *The PLO and Palestine* (London: Zed Books, 1983) p. 118. The collapse of the PLO's social services was, presumably, a contributing factor to the dissatisfaction among Fatah rank-and-file members.

⁶ A. Merari, and S. Elad, *The International Dimension of Palestinian Terrorism* (Boulder, Co.: Westview Press, 1986).

⁷ Y. Sayigh, *Armed Struggle and the Search for State: The Palestinian National Movement, 1949-1993* (Oxford: Oxford University Press, 1997), p. 307.

⁸ John Amos cites the numbers of claimed Palestinian commando operations against Israel during the years 1969-1972, as published by *Filastin al-Thawrah*, the central PLO periodical:

1969	1970	1971	1972
2390	NA	545	327

See: John Amos, *Palestinian Resistance: Organization of a Nationalist Movement* (New York: Pergamon Press, 1980), p. 220.

⁹ Abu Iyad, *Lelo Moledet* [Without a Homeland] (Jerusalem: Mifras, 1979), p. 147. This is the Hebrew translation of a series of interviews that Abu Iyad gave to the French journalist Eric Rouleau, which were originally published in French as *Palestinien sans Patrie* (Fayolle, 1978).

danger that this violence would take a private and anarchic character, we had to direct the rage to the desired channel, to organize it and provide it with a political content.”¹⁰ Abu Iyad in an interview quoted by Sayigh states that as early as 1972 “...‘to ensure our survival and await better circumstances’ meant extending Palestinian attacks ‘to the external arena...we must follow new methods, our tactics must change’.”¹¹

Intra-organizational causes

Two kinds of intra-organizational pressures precipitated Fatah’s decision to carry out spectacular attacks in the international arena. The first was the revolt among the younger generation of Fatah members, who challenged the old leadership after the fiasco in Jordan. Abdallah Franji described the mood among Fatah members after the disaster in Jordan as follows: “Intense bitterness and resentment now became widespread. Faith in their own leadership was badly shaken and they had only contempt and mockery for their ‘Arab brothers.’ Many of these young men began to realize that the resistance had not been radical or hard enough – and in the leadership of al-Fatah and the PLO these feelings fell on fertile ground.”¹² Amos underscores this theme in more detail:

[T]he resistance was bitterly divided over the events of September, and the leaderships of every organization were challenged. From this point on, a number of radical organizations, all dedicated to some form of international terror, split off from almost every major resistance group. And the issues were usually the same: younger, more militant members challenged the ‘historic leaders’ on the grounds that they were armchair revolutionaries...The result was either an actual split or, as in the case of Fatah (and apparently the PFLP), the creation of a new group affiliated organizationally with the parent group but publically separate from it – the BSO and its offshoots, and a number of offshoots off the PFLP.¹³

The dissent was expressed openly in Fatah’s Congress, which was held in Damascus in August-September 1971. Several writers have maintained that the decision to establish the clandestine sub-organization that later became known as BSO was reached in that congress.¹⁴ To quote Amos again:

Initially the BSO served as an organizational safety valve, and outlet for Fatah radicals who would otherwise have directed their activities at overthrowing its leadership; a technique for satisfying the Fatah wing that wanted to adopt a terrorist strategy. Later, the BSO took on an impetus of its own. It became a key issue in the struggle between the left and the right in Fatah. Ultimately, BSO members (such as the Black June faction) began acting on their own, irrespective of any Fatah direction.¹⁵

According to one claim, initially BSO operations were carried out on the initiative of relatively low-level operatives. According to Sayigh, Ali Hasan Salama organized on his own initiative the assassination of Wasfi Tal, the first attack that brought BSO to public attention. Sayigh explains that Salama was embittered about being criticized for his performance in Jordan during the war, hinting that his wish to regain respect drove him to initiate the spectacular assassination. As described by Sayigh, “Salama quietly recruited former Rasd [Fatah intelligence apparatus] members

¹⁰ Abu Iyad, *Lelo Moledet*, p. 145.

¹¹ Sayigh, *Armed Struggle*, p. 309, quoting Abu Iyad interview in al-Wihda, 1 June 1972.

¹² Franji, *The PLO*, p. 119.

¹³ Amos, *Palestinian Resistance*, p. 222.

¹⁴ Amos, *Palestinian Resistance*, p. 223. Merari & Elad, *The International Dimension*, p. 27.

¹⁵ Amos, *Palestinian Resistance*, p. 226.

to his cause (it is not clear if Khalaf helped) and named his group the Black September Organization (BSO).¹⁶ By this description, a major strategic change was initiated by personal hurt feelings. Even if this account is true, however, it should be remembered that this single attack was adopted by the whole organization as a new strategic line only because the soil was fertile for such a change. Furthermore, in his confession broadcast in Jordan after his arrest, Abu Daoud described the assassination of Wasfi Tal as project headed by Muhammad Yusuf Najjar, head of Fatah Special Operations and Intelligence apparatus, a much more senior figure than Ali Hasan Salama.

The other pressure within Fatah had to do with inter-personal competition inside Fatah's leadership, mainly between Abu Iyad on the one hand, and other members of the central committee, including Yasser Arafat, Khalil al-Wazir, Muhammad Najjar, and Kamal Udwan on the other hand.¹⁷ During Fatah's congress in Damascus in September 1971, Abu Iyad was deposed from his role as head of Rasd. He wanted to build another power base to augment his prestige, especially among the young generation, by organizing spectacular attacks.¹⁸

It is not clear, however, whether BSO was an ordinary hierarchical organization within Fatah, having a single top leader and departments such as recruiting, training, intelligence, operations, logistics, etc. Most sources regard Abu Iyad as BSO's top leader. However, Abu Daoud's confession, made public by the Jordanian authorities after his arrest in 1973, listed several top leaders of Fatah as responsible for different BSO operations: Abu Iyad was in charge of the Munich attack, Khalil al-Wazir (Abu Jihad) organized the takeover of the Israeli embassy in Bangkok in December 1972, and Yusuf al-Najjar specialized in assassinations.¹⁹ If this description is correct, it means that rather than one cohesive group, BSO was a more diffuse entity and operations claimed under its name were actually orchestrated by different Fatah chieftains, each one of them using resources available to him. Such a situation would presumably be grounds for intense competition among the chieftains, a competition that would drive each one of them to surpass the others in originality, daring, and dramatic effect.

Inter-organization competition

Presumably, the leadership of Fatah feared that in the absence of spectacular attacks, frustrated young Palestinians would turn to the PFLP. That organization, which operated in the international arena, was able to continue the struggle whereas Fatah's operations against Israel from neighboring countries were severely curtailed. Fortunately for Fatah, the PFLP leadership apparently agreed to cooperate in the establishment of a joint apparatus of international terrorism – BSO – under Fatah leadership. A simple comparison of the number of international attacks attributed to the PFLP before and after the establishment of BSO suggests that the PFLP by and large ceased claiming credit for international operations under its own name while it continued operations under the BSO banner (see Table 1). Thus, the creation of BSO saved Fatah from a hard competition that, presumably, would have resulted in a drift of members to the rival organization.

¹⁶ Sayigh, *Armed Struggle*, p. 307.

¹⁷ Sayigh, *Armed Struggle*, p. 306.

¹⁸ Amos notes that Abu Iyad supported international terrorism even before Black September (p. 51).

¹⁹ Amos, *Palestinian Resistance*, p. 223.

Table 1: Number of international attacks attributed to the PFLP and the BSO, 1968-1974

	1968	1969	1970	1971	1972	1973	1974
PFLP	2	9	8	1	2	2	3
BSO	-	-	-	3	16	12	1

Facilitating Factors

Until the events of Black September in Jordan, international Palestinian terrorism was the PFLP's playground. Fatah, on the other hand, influenced by the models of the wars in Algeria and Vietnam, insisted that the struggle must be held in the Occupied Territories and Israel. This position was at least partly motivated by the organization's wish to maintain international respectability as the representative of the Palestinian people, and its unwillingness to embarrass Arab countries known to be the PLO's sponsors. Because Fatah was by far the largest organization in the PLO and Fatah leaders made the bulk of the PLO's leadership, politically and diplomatically the two organizations, Fatah and the PLO, were almost one and the same in international perception.

The PFLP, on the other hand, had no such constraints. Starting in July 1968, this group pioneered modern international terrorism in a series of hijackings of commercial airliners and other attacks, mainly on civil aviation in Western Europe.²⁰ For the PFLP, carrying out attacks in Europe had clear tactical advantages: Palestinian students and émigrés in European countries provided a large reservoir of youngsters familiar with local languages and customs; as a radical left-wing group, the PFLP enjoyed support and assistance from European left-wing circles; lax security measures in West European countries made travel and access to targets easier, as well as facilitated escape after the operation; and lenient attitude of the local authorities in case of capture reduced the level of danger to the perpetrators. These factors had a great weight, especially when compared with the meager success of terrorist and guerrilla operations in Israel.

What was more important than tactical considerations was the fact that these operations gained much greater publicity and therefore had much greater psychological impact than attacks inside Israel or the Occupied Territories. In a famous interview he gave to Oriana Fallaci, George Habash, leader of the PFLP said: "We believe that to kill a Jew far away from the battleground has more effect than killing 100 of them in battle; it attracts more attention. And when we set fire to a store in London, those few flames are worth the burning down of two kibbutzim because we force people to ask what is going on."²¹ In the wake of the disaster in Jordan, international terrorism seemed the only option that could salvage the image of the resistance as a powerful fighting political entity. The salience of this option was certainly augmented by the glaring example provided by the PFLP with its record of successful operations in Europe.

Moreover, the possibility of international operations seemed attractive also because the PFLP already had a terrorist infrastructure in place in Western Europe, including a set of local supporters who belonged to radical left-wing circles in several West European countries.²² Cooperation with the PFLP thus saved Fatah much time in implementing the decision to go

²⁰ Three other Palestinian groups, in addition to the PFLP, carried out terrorist attacks in Europe before 1971. These were: the Democratic Front for the Liberation of Palestine, the Palestinian Popular Struggle Front, and the Popular Front for the Liberation of Palestine – General Command.

²¹ *Life*, June 12, 1970, p. 33.

²² Helena Cobban, *The Palestinian Liberation Organization: People, Power and Politics* (Cambridge: Cambridge University Press, 1984), p. 148; Merari & Elad, *The International Dimension*, pp. 43-44.

international. The leaders of the new international terrorism apparatus were high ranking Fatah members, but its field operatives included members of other groups, especially the PFLP.

Another facilitating factor was the aid provided by Arab countries through their diplomatic delegation, as well as by PLO missions (which in the 1970s did not have a recognized official diplomatic status in most West European countries but functioned under the auspices of the Arab League offices). Supporting Arab countries provided invaluable assistance by allowing the use of their diplomatic pouches for weapons shipments and providing false passports, as well as offering safe havens to the perpetrators before and after the operations.

BSO's Road to Munich

The first attacks carried out by the BSO were aimed at taking revenge against Jordan. The name "Black September Organization" first appeared in the news in claiming responsibility for the assassination of Jordan's Prime Minister Wasfi al-Tal in Cairo, on November 28, 1971. The murder was presented as an act of revenge against one of the main Jordanian officials responsible for the defeat and expulsion of the PLO forces from Jordan. Before the assassination in Cairo, Fatah members carried out several small-time attacks against Jordanian targets in Europe and the Middle East.²³ All these attacks were insignificant. They did not cause casualties (except for one of the perpetrators) and did not create a notable public impact. Thus, they did not serve the purpose of boosting Palestinian morale. They were possibly carried out before the daring and highly capable apparatus of the BSO was laid in place.

In the following months BSO added to its roster attacks on Israeli and West European targets. Still, most of the attacks were unimportant. With one exception they were merely nuisance that did not make big headlines. The only dramatic attack carried out by the BSO before the Munich operation was the hijacking of a Belgian Sabena airliner en route from Brussels to Tel Aviv that was forced to land in the Israeli airport under the command of the BSO hijackers, who thus posed a direct, bold challenge to the government of Israel. The hijackers – two men and two women – demanded the release of 317 Palestinians held in Israeli prisons. The world held its breath while Israeli authorities negotiated with the hijackers over 22 hours. Then Israeli commandoes stormed the plane, killing the two male hijackers and arresting the two females. One passenger was killed and three wounded. The event was generally perceived as an Israeli victory and a defeat of the Palestinian resistance in general and BSO in particular. The organization now needed desperately a dramatic success for salvaging the resistance image both internally and internationally.²⁴ To ensure success, the group had to make meticulous preparations.

According to Abu Iyad, the Munich attack was designed to attain three objectives: to remind the world that there is a Palestinian problem; to use the extraordinary concentration of mass media

²³ A bomb exploded on board of a Jordanian Alia airliner in Cairo on April 24, 1971; an attack on Jordanian Alia airlines office in Rome on July 20, 1971; a firebomb was thrown at the Jordanian Embassy in Paris on July 23, 1971; a bomb exploded in an empty Alia airliner in Cairo airport on July 24, 1971; a bomb explosion in the lavatory of an Alia airliner at Madrid airport before boarding, on August 24, 1971; on September 8, 1971 an Alia airliner en route from Beirut to Amman was hijacked and forced to land in Benghazi, Libya; two attempts to hijack Alia airliners en route from Beirut to Amman were prevented by sky marshals on September 16 and on October 4, 1971; and on October 6, 1971, a time bomb exploded in the luggage of an Alia employee as it was loaded on the plane.

²⁴ Abu Daoud who, according to his own testimony was in charge of the Munich attack, said in an interview in 2002 that after the failure of the Sabena hijacking incident Arafat was desperate to boost morale in the refugee camps by showing that Israel was vulnerable. See: Alexander Wolff, "The Mastermind," *Sports Illustrated*, August 26, 2002, available at: http://sportsillustrated.cnn.com/si_online/news/2002/08/20/sb2/, accessed September 28, 2011.

in the Olympic games; and to gain the release of Palestinian prisoners from Israeli jails.²⁵ In describing the course of the attack, however, Abu Iyad notes that the perpetrators would have been willing to exchange the hostages for just nine prisoners held by Israel, suggesting that humiliating Israel was more important than the release of a large number of prisoners.

As a reason for choosing the Olympic summer games as the site of the attack, Abu Iyad mentioned that the Olympic Committee ignored two requests of the PLO to allow the participation of a Palestinian delegation in the Munich Olympics.²⁶ In an interview he gave to the Associated Press in 2006, Abu Daoud supports this point: "I remember Abu Iyad looked at me and said: 'Let's participate in the Olympics in our own way. Let's kidnap (Israeli) hostages and swap them for prisoners in Israel.'"²⁷ Hence, the symbolic meaning of the attack: We shall not let you ignore us. Presumably, however, the assured immense publicity was the critical factor in choosing the Olympics as the site of attack, not being denied permit to participate in the games.

Conclusions

In the case of BSO, motivation for innovation was driven by both pressure from below and leaders' initiative after an intense crisis that shook their legitimacy in the eyes of their members and constituency. The turning to the international arena in general and the spectacular Munich attack in particular were Fatah's remedy for the severe morale problem in its ranks in the wake of the disaster in Jordan, and a solution for the group's curtailed ability to carry out cross-border attacks in Israel. Arguably, the structure of the PLO as an umbrella organization that incorporated several independent groups, contributed to both the readiness of Fatah leadership to accept the idea of carrying out terrorist attacks in the international arena and to the ability to implement this shift more easily.

The Munich attack seems to support the notion that centralized leadership is required for carrying out a complex innovative operation. The attack was a rather demanding operation, requiring the assigning of fighters with appropriate qualifications (language capabilities, weapons training, suitable personality characteristics), smuggling of weapons, and other logistical needs. Careful planning and execution were a must for the success of the operation. Only a centralized, hierarchical organization can carry out a complex operation of this kind. According to Abu Iyad preparations for the operation began at least eight months before the Olympic games. First, two fighters were selected as commanders for the planned operation. The other six members of the assault team were selected from among 50 young fighters who were summoned to undergo intensive training. The chosen six were then sent to various European cities to get used to Western customs. The two commanders of the operation carried out a long reconnaissance tour in Germany, including a visit to the Olympic village.²⁸

In hindsight, there were not many overt indications that could have led law enforcement agencies in Israel and the Federal Republic of Germany to take measures that would have foiled the Munich attack without the help of an informant.

²⁵ Abu Iyad, *Lelo Moledet*, p. 158.

²⁶ Ibid.

²⁷ Associated Press, "Abu Daoud: No regrets for Munich Olympics." *New York Times*, February 23, 2006.

²⁸ Abu Iyad, *Lelo Moledet*, pp. 158-1160.

APPENDIX III: Z. ABUZA, RAMZI YOUSEF'S BOJINKA PLOT, 1994-1995

Ramzi Yousef's 1994-1995 Bojinka plot was - at that point - the boldest and deadliest terrorist plot ever conceived. Following the February 1993 bombing of the World Trade Center, Yousef fled to Karachi, Pakistan. He made his way in late-2003 or early-2004 to the southern Philippines, where he trained members of a violent Islamic secessionist group, the Abu Sayyaf, in bomb making. In mid-1994, he moved to Manila where he was joined by his uncle and close friend, Khalid Sheikh Mohammed. There, the two began to work on a plot that would simultaneously down 11 or 12 US-flagged jetliners as they flew across the Pacific. Yousef had designed very small nitroglycerine based bombs that could be hidden in contact lens solution bottles, and assembled on the plane. The blasting cap was hidden in the hollow in the heel of a shoe, while a Casio watch served as the detonator. The fact that the bomb could be assembled from components that could easily pass the existing security procedures, and be assembled on the plane, marked a significant innovation in terrorism. Five individuals were to make two or three flights on the US jetliners, deplaning during layovers and getting on another US-flagged carrier, each time leaving a time delayed bomb strategically placed under a seat near the fuel reservoirs in the wings. The five were to rendezvous in Karachi, Pakistan.

Yousef acquired chemicals throughout the fall of 1994, and tested both his bomb design as well as his detonator. The planning was deliberate and methodical. He made two test runs. The first was a scaled down bomb in a Manila theater. The second was a bomb on a Philippines Airline flight 434 from Manila to Cebu to Tokyo, Japan.

Yet, on the night of 6 January 1995, just two weeks before the planned attack, the volatile chemicals that Yousef was mixing in rented room 603 of the Dona Josefa Apartment building on Quirino Avenue in Malate, Manila, caught fire. He and two accomplices, Abdul Hakim Murad and Wali Khan Amin Shah, fled the apartment as poisonous smoke filled the air. The Manila fire department arrived and put out the fire. Noting the suspiciousness of the scene, they notified the police who were already on heightened alert in preparation for the Pope's visit on 12-16 January. The police made a surreptitious entry and discovered large number of chemicals and other components for an IED. Believing that this was a plot directed at the Pope, they staked out the apartment. Yousef and his accomplices waited near by.

After the fire department left and they saw no police or anything suspicious, Yousef cajoled Murad to enter the apartment in the early hours of 7 January to recover his laptop. Police were waiting inside and wrestled him to the ground. He was taken to police headquarters where he was interrogated and revealed a broader plot than the assassination of the Pope, including the Bojinka plot and the December 1994 bombing of PAL flight 434. Wali Khan Amin Shah was arrested four days later, after police had learned of and followed his girlfriend. Shah was arrested with bomb-components, IED cookbooks, firearms and a riflescope, and documents that linked him to a transnational terrorist network.

Yousef fled the country on 7 January, flying to Singapore, Bangkok and then to Karachi, where he was arrested in February 1995 in a joint US-Pakistan operation. He was rendered to the United States where he stood trial for both the airline plot and the February 1993 bombing of the World Trade Center that killed six and wounded more than a thousand. He was sentenced for life for the former and 240 years for the latter. The reality is the bulk of the trial focused on the February 1993 World Trade Center attack, not the conspiracy to down US jetliners.

The Bojinka plot never happened. But it is inaccurate to say that it was “thwarted.” It is also wrong to say that the attack was a failed innovation. Indeed, I will argue in this paper that Yousef made several successful innovations in tactics, strategic objectives and organization.

For one thing, and we cannot overlook this, the December 1994 bombing was successful. It was a combination of five factors that prevented a catastrophic crash of the Boeing 747 and a loss of all 293 people on board. First, Yousef had requested a certain seat based on the seating on previous flights on 747s. This plane, however, had been re-configured after Philippine Airlines had purchased it from SAS. Thus seat 26K was in front of the wings, not by the fuel tanks. The bomb could still have ignited the fuel tanks had it been placed facing a different direction. The explosive force went down into the baggage hold - rupturing the cargo door. If the bomb had been placed on its side, facing diagonally behind him, it could have been far more devastating. Third, the flight was delayed by 38 minutes. Combined with the guestimate that he set the timer, at the time of detonation, the plane was in range of a US military airfield in Okinawa, Japan. Finally, the blast did significant damage to the plane, including to the steering cables. The pilots deserved inordinate credit in their ability to control the plane. As it was only one person, a Japanese businessman, was killed and 10 were wounded. But had any of those five factors gone the other way, the remaining 272 passengers and 20 crewmembers would have also been killed. In short, the design of the bomb and execution of the plot had both been successfully tested.

Tactical Innovation

The Bojinka Plot exhibited three separate tactical innovations. The first was the bomb design itself. Most bombs that damaged airlines to that point were either comprised of dynamite or military-grade plastic explosives, such as C4, RDX, PETN or Semtex.¹ Military-grade plastic explosives are readily available to groups with state-sponsorship or states that perpetrate terrorism. For example the Libyan agents who brought down Pan Am flight 103, over Lockerbie, Scotland, killing 270 people used roughly one pound of PETN. The 1985 twin attacks on Air India flights by Sikh nationalists were done with sticks of dynamite hidden in stereos, detonated with blasting caps.² Both dynamite and military-grade explosives are considered “secondary explosives”. They are very stable, although they require a larger charge to detonate.

Only on two occasions had someone tried to use liquid explosives. On 29 January 1987, two North Korean agents blew up Korean Airlines flight 858, a Boeing 707, from Baghdad, Iraq. Although they did use the liquid explosive PLX, which is extremely volatile, as an accelerant hidden in liquor bottles, the actual bomb was a plastic explosive hidden in a radio. The following year is the first instance of using a liquid explosive. In this case, involving a South African jet, a small ammonium nitrate bomb was detonated by nitroglycerine. But this attack was labeled a criminal plot, not a case of terrorism.³

¹ This comes from a chronological review of airline bombings from 1948-2001, compiled by the European Community, and can be found at http://ec.europa.eu/transport/air_portal/security/studies/doc/2004_aviation_security_appendix_b.pdf.

² On 23 June 1985, Sikh militants blew up Air India flight 182, a Boeing 747 flying from Canada to India via the United Kingdom. All 329 were people killed on this flight. One hour later, a second bomb detonated at Tokyo's Narita Airport on a lay over en route to Bangkok, Thailand, but as the Air India flight 301 had been delayed, the bomb only killed two baggage handlers.

³ This comes from a chronological review of airline bombings from 1948-2001, compiled by the European Community, and can be found at http://ec.europa.eu/transport/air_portal/security/studies/doc/2004_aviation_security_appendix_b.pdf.

The bomb Yousef developed and tested on PAL flight 434 in December 1994 was designated as a “Mark II microbomb,” comprised of nitroglycerine in a 30ml bottle of contact lens fluid. It was detonated by the charge generated from a Casio watch through wires and a blasting cap that he had hidden in the hollow of the heel of his shoe. All of the components were able to pass through security screening at the airport, and no screening system in the Philippines at that time was capable of foiling that plot. Unlike the majority of bombs used on planes to that point that were placed in checked luggage, the bomb was assembled in the lavatory during the flight and placed under a seat. The time-delayed bomb was set for the second leg of the journey after Yousef disembarked in Cebu.

The nitroglycerine bombs were fashioned out of commercially available chemicals. While not readily available, they were easy enough for him to acquire without raising any suspicion through the establishment of a front trading company and money wired into the Philippines from a registered company in Malaysia (Konsojaya).

Yousef had some experience working with nitroglycerin. It was used as part of the detonating device for the 1993 World Trade Center bomb, largely a mixture of urea-based fertilizer and sulfuric acid with diesel fuel, surrounded by three cylinders of compressed hydrogen. Blasting caps attached to four large containers of nitroglycerine detonated the bomb. In the Bojinka plan, the nitroglycerin was the bomb. When the bomb failed to destroy PAL flight 434, Yousef decided to simply make the bomb slightly larger to adjust for less than ideal placement.

The second tactical innovation was the sheer complexity of the operation. The plot involved incredible logistical planning, involving 11 or 12 US-flagged carriers departing from various South and East Asian cities, making layovers where Yousef and his accomplices could disembark. This was a highly thought out plan. This required a thorough understanding of routes and timetables and complex logistical planning.

The entire plot took significant timing, planning and testing. The plot was conceived in the summer of 1994 when Khalid Sheikh Mohammed joined his nephew in Manila. They started to procure chemicals that summer. Yousef worked on both the bomb design and detonator through the fall. He and his uncle returned to Karachi, Pakistan in September, where they recruited Wali Khan Amin Shah into the plot. Though KSM remained in Pakistan, Yousef returned to the Philippines. In November Yousef was able to purchase large quantities of the necessary chemicals, enough for at least 13 bombs. In December 1994, he carried out two tests of his device. The first occurred on 1 December 1994 at the Greenbelt movie theater in Makati, Manila, when a scaled down bomb wounded several people. Then on 11 December the dry run on PAL flight 434. Philippine National Police believe that Yousef was mixing chemicals at the house of Tareq Javed Rana, a Pakistani national, which caught fire in late December 1994.⁴ Yousef and his assistants were again mixing the chemicals in early January 1995, at the apartment in Malate, Manila, preparing for their wave of attacks in mid- to late-January 1995. The planning and execution were methodical and deliberate.⁵

Finally, we often overlook the fact that in addition to the nitroglycerine bomb Yousef was simultaneously building two other completely different types of bombs. The first was a large pipe bomb made of acetone peroxide in the apartment to be used to target the Pope’s motorcade. The bomb was to be detonated using a radio frequency. Though Yousef did not expect the bomb to kill

⁴ Philippine National Police, After Intelligence Operation Report, 27 February 1995, 6.

⁵ United States v. Ramzi Ahmed Yousef, No. 98-1041(L) United States Court of Appeals for the Second Circuit, 4 April 2003, p. 13, at news.findlaw.com/cnn/docs/terrorism/usyousef40403opn.pdf or <http://www.lexisone.com/lx1/caselaw/freecaselaw?action=OCLGetCaseDetail&format=FULL&sourceID=gdig&searchTerm=eijf.dafa.aadi.Yabd&searchFlag=&l1loc=FCLOW>.

the Pope, he was looking for a media opportunity to air political grievances. When police originally began to break up the cell from 7-11 January they really thought that the primary operation was targeting the Pope, who was scheduled to visit Manila from 12-16 January 1995, not bringing down 12 jetliners. Indeed, it was not until Philippine National Police cyber experts were able to break the encryption on Yousef's laptop that they were really able to learn that the plot went way beyond assassinating the Pope and that he was linked to the December 1994 bombing of the PAL jetliner.⁶

Yousef developed the third bomb specifically for cargo planes. This bomb was to be made of nitrocellulose – a highly volatile chemical more commonly referred to as flash powder or gun cotton – again using his Casio watch detonator. The nitrocellulose was to be embedded in crates of jackets and flammable textiles. After Yousef fled the Philippines and returned to Pakistan, in January 2005, he continued to work on this bomb and was in the final stages of executing a plot.⁷ Indeed, there is some evidence to suggest that the person he was trying to recruit to perpetrate the attack out of Thailand was the individual who provided authorities the tip to Yousef's whereabouts and ultimately to his arrest in a Karachi guesthouse in February 1995. Yousef shared this bomb design with his uncle Khalid Sheikh Mohammed who, according to the *9/11 Commission Report* took it to Osama bin Laden in Tora Bora in 1996, as part of a menu of proposed terrorist operations. Bin Laden rejected this plan as he wanted suicide operatives.⁸

Strategic Innovation

Ramzi Yousef had always thought in terms of massive terrorist plots. He did not want to detonate a bomb in New York; he wanted to bring down the World Trade Center. He didn't want to just blow up a plane; he wanted to blow up 11-12 simultaneously. To that point there had only been two instances of attacking two planes near simultaneously: the 1985 bombings of the Air India flights and the Popular Front for the Liberation of Palestine's bombing of airliners over Austria and Switzerland in February 1970.⁹

So he was trying to do something on a scale nearly six times larger than what had ever been successfully done. A single attack on a plane sends tremors through the airlines industry and causes panic. But a successful attack on this scale would have brought the global airline industry to a standstill. This was a terrorist attack that would have a massive global economic impact; truly a "weapon of mass effect." This was the first case of targeting such a critical node of the global economy to affect political and diplomatic change with global consequences. If one also considers

⁶ There is no evidence that the Philippine National Police had any evidence before the 7 January 1995 arrest of Abdul Hakim Murad that tied the plotters to the bombing of PAL flight 434. The PNP's after intelligence report, written in February 1995, acknowledges that only with the arrests of Murad and Wali Khan Amin Shah on 11 January 1995, as well as the recovery of Yousef's laptop, were they able to solve the bombing of PAL flight 434.

⁷ According to the *9/11 Commission Report*, while in Qatar in February 1995, "KSM and Yousef consulted by telephone regarding the cargo carrier plan, and Yousef proceeded with the operation despite KSM's advice that he hide instead." See n 8, 489. In another note the report corroborates this: "Evidence gathered at the time of Yousef's February 1995 arrest included dolls wearing clothes containing nitrocellulose." See n 7, 488. The full report is available online at <http://govinfo.library.unt.edu/911/report/>. For more on the vulnerability of cargo planes, see P.J. Crowley and Bruce Butterworth, "Keeping Bombs Off Planes: Securing Air Cargo, Aviation's Soft Underbelly," Center for American Progress, May 2007, at http://www.americanprogress.org/issues/2007/05/pdf/air_cargo.pdf. Pages 1 and 9 reference Yousef's plot.

⁸ *9/11 Commission Report*, n 8, 489.

⁹ This comes from a chronological review of airline bombings from 1948-2001, compiled by the European Community, and can be found at http://ec.europa.eu/transport/air_portal/security/studies/doc/2004_aviation_security_appendix_b.pdf.

his bomb design to target cargo planes, he would have done catastrophic harm to the global economy.

It was also an ideological innovation. Yousef perpetrated the December 1994 attack in the name of a group that had absolutely nothing to do with the attack, the Abu Sayyaf. Perhaps it was a false flag, but he did believe in the principle of a transnational alliance of like-minded militant Islamist organizations.

Organizational Innovation

Simon Reeve had it wrong when he described Ramzi Yousef as a “new jackal,” a solely independent operator.¹⁰ Yousef, according to KSM was never a member of Al Qaeda, and indeed KSM himself did not become a member until he was actively planning the 9/11 attacks.¹¹ Yousef was really at the forefront of what Al Qaeda was trying to do. Al Qaeda’s real innovation was twofold: First, it shifted the focus of groups from the “near enemy” to the “far enemy” and, second, it tried to create an international network of likeminded groups; recall bin Laden’s 1998 *fatwa* was issued in the name of the International Islamic Front Against Jews and Crusaders. Yousef’s operation was the vanguard of both of those, and his success may have inspired Al Qaeda. Indeed KSM acknowledged that bin Laden agreed to meet with him probably because of his relationship to Yousef, more than the fact that they had fought together in Afghanistan in 1987.¹²

Yousef was not a lone operator. His operation was only possible because he could work with a variety of individuals and nascent organizations. This was his *modus operandi*. For example, when he was in the US preparing for the February 1993 attack on the World Trade Center, he relied on Egyptian Islamic Jihad and Afghan refugee networks. In the Bojinka plot, he worked closely with Khalid Sheikh Mohammed, who later wired money to him based on his connections in Pakistan, long before he joined Al Qaeda. Other funding for the operation came through a Malaysian-registered company, Konsojaya, which was established by a JI leader and a close associate of Khalid Sheikh Mohammed, Riduan Isamuddin, better known as Hambali. The money and actual ownership of the corporation came from Middle Eastern Al Qaeda operatives. As the *9/11 Commission Report* noted, “According to KSM, the plot was to receive financing from a variety of sources, including associates of co-conspirator Wali Khan and KSM’s own funds.”¹³

Other funding for his operation came through Mohammed Jamal Khalifah, the brother-in-law of Osama bin Laden, who moved to the Philippines in 1989, from Peshawar, Pakistan, where he was working for the Muslim World League supporting the anti-Soviet Mujiheddin. In the Philippines, Khalifah established branches of Saudi charities the International Islamic Relief Organization and the Muslim World League. He would later open a branch of the Al Qaeda financial vehicle Muwafaq. He established a number of local charities and worked closely with Muslim rebels from the Abu Sayyaf and the Moro Islamic Liberation Front (MILF) in the Philippines. Yousef, himself, had worked with these groups before moving to Manila, instructing them in bomb making. He relied to a limited extent on operatives from these groups to assist him in the Bojinka planning. His two main accomplices were from Pakistan. One, Wali Khan Amin Shah was a very close associate of Osama bin Laden’s during the anti-Soviet mujiheddin era, whom KSM met while in Afghanistan. Hakim Murad, was another associate of Khalid Sheikh Mohammed’s. Yousef pulled together this network, but he did not establish an organization.

¹⁰ Simon Reeve, *The New Jackals* (New York: Northeastern, 2002).

¹¹ *9/11 Commission Report*, n 10, 489.

¹² *9/11 Commission Report*, 149.

¹³ *9/11 Commission Report*, n 7, 489.

Yousef did not want a large organization. Indeed he seemed to think that was a liability. He was trying to make as small a footprint as possible, relying on just a handful of trusted colleagues. His goal was to be able to quickly move on and replicate the attacks. Yousef was truly transnational in his approach; he had no singular territorial ambition. He wanted to go after the “far enemy” in support of Muslim causes around the world. Like KSM, he valued his independence.

Drivers of Innovation

What made these innovations possible? At a personal level, there was Yousef himself. He had a master’s in electrical engineering from the University of Swansea. He had also studied chemistry. Moreover, In 1991-92, he trained at the most advanced bomb-making course at the Khalden terrorist camps in Afghanistan. He was intellectually capable and schooled over a long period of time. The cookbooks for the nitroglycerine bombs were not for the layperson, nor were the cookbooks that his accomplice brought into the United States for the 1993 attack.¹⁴

But it was more than intellect. He was highly driven and exceptionally entrepreneurial by nature. He was single-minded and determined. He had an entrepreneur’s very high tolerance for risk. He also had an enormous ego that was every bit as large as his hatred of the United States. He didn’t want to be a terrorist, he wanted to be *the* terrorist who perpetrated attacks on scales that had never been seen before, and which had global consequences. He was the quintessential maniacal entrepreneur.

Second, he had no ready supply of military grade explosives that organizations with state-sponsorship had. He needed to work around this. It is possible that he was looking for an alternative as governments, as a result of the Lockerbie bombing in December 1988, were looking for better ways to detect plastic explosives and had increased scrutiny of consumer electronics being checked in the cargo holds.¹⁵

The third driver was the absence of an organization. Yousef acted with the help of few assistants. Although there was a wider network, he was the leader, bomb maker and operational planner. There were neither structural impediments to innovation nor bureaucratic layers. Indeed he seemed very inquisitive and willing to experiment with various designs.

The 2010 DTRA-sponsored conference on terrorist innovation highlighted the importance of leadership. And here we need to focus on his relationship with his uncle, Khalid Sheikh Mohammed (KSM). The two were actually only two years apart and quite close friends. While Yousef had the requisite technical skills, KSM had the international connections to bring the plot to fruition. It was his contacts that funded the operation and set up the front companies. He eagerly encouraged Yousef in the Bojinka plot and actively encouraged him to innovate with other bombs for follow on attacks. They were fellow travelers who thought big, who were preparing for a long reign of terror. As the previous conference report noted about KSM: “His maniacal fascination with fantastic terror operations preceded the 9/11 attacks and was critical to conceiving them.”¹⁶ The reason KSM went to bin Laden and ultimately joined Al Qaeda was that he believed only Al Qaeda had the resources to perpetrate the type and scale of attacks of which KSM dreamed.¹⁷

¹⁴ Immigration authorities stopped both Yousef and his accomplice, Ahmed Ajaj, upon their arrival in the US and the bomb-manuals were discovered. Sadly, the two were later freed. Yousef admitted that his travel documents were forgeries and requested asylum. The bomb-manuals were released to them. See *9/11 Commission Report*, 72.

¹⁵ *The Federal Aviation Administration: A Historical Perspective, 1903-2008*, 87, at http://www.faa.gov/about/history/historical_perspective/media/historical_perspective_ch7.pdf.

¹⁶ *Terrorist Innovations in Weapons of Mass Effect*, Conference Report, August 2010, 30.

¹⁷ *9/11 Commission Report*, 149.

Fourth, a theme in the first phase of the conference was that terrorist innovation happens slowly and over time. As mentioned above, Yousef had used some nitroglycerine in the 1993 World Trade Center bomb. He clearly found the explosive appealing and worth innovating.

And that brings me to the final point: Yousef was short of funds for the 1993 operation. He famously quipped to the FBI agents when he was flown back to the United States from Pakistan and passed the World Trade Center in their approach to the airport, that if he had more money, they wouldn't be standing. The bomb worked, it was a good design, but it was just too small. And maybe that was an important factor in the Bojinka design. By focusing on a small liquid-based bomb, he would need relatively fewer financial resources. He was simplifying the WTC bomb and making it smaller, more manageable, though no less destructive or consequential. He calculated what would be enough to get the job done, with the correct placement. To me, that is very refined.

The Limits of Innovation

The critical question for me is why no one tried to replicate his plan. Even after authorities learned of the Bojinka plot there were no real meaningful countermeasures put in place in the global aviation sector that could have prevented a similar attack. Protocols and counter-measures were developed but they were never implemented globally. It was not until Richard Reid's shoe bomb in December 2001 that passengers were routinely required to have their shoes screened, while it was not until the 2006 trans-Atlantic bomb plot that passengers were not allowed to bring liquids on board. Global rules changed within months of these two attacks. So why was his plot not replicated? Why did others not utilize his design? There are two key reasons for this.

First, Yousef was an arrogant and reticent operator. He kept everything to himself. He was a control freak who showed no interest in transmitting his knowledge. He was not trusting. Abdul Hakim Murad said in his interrogation that when he arrived in the Philippines, Yousef took his passport "for safe keeping",¹⁸ and it was Yousef who forced Murad to return to the apartment after the fire was put out to recover Yousef's laptop. His cookbooks were a mix. Some were straight from chemistry texts so that no one without a masters-level degree in chemistry could discern. They were not for the layman. Other cookbooks were written in the vernacular, but in shorthand. There is no evidence that he ever tried to teach anyone the process. Indeed, although he spent time in the southern Philippines teaching bomb making, he is unlikely to have taught anything remotely this complex. No bomb of the MILF or ASG has been remotely as complex; none that I know of has ever involved liquid explosives.

I would note this in contrast to Dr. Azahari bin Husin the master bomb-maker of Jemaah Islamiyah and former educator whose cookbooks and manuals were written in a plain straightforward manner that anyone, with even a rudimentary education, could understand. Now it is possible to speculate that had Yousef not been captured so soon after his return to Pakistan, he would have gone back to the Khalden training camp where he was originally trained. Indeed, after 1996 when Al Qaeda set up bases in Afghanistan, he would have had more opportunities to train others. Again this is speculation, but more importantly, it seems out of character. He was not a teacher, but a doer. This attack was at the beginning of the Internet era, and it is possible that had the Internet been the global medium that it is today, that he would have disseminated his designs. But, again, his ego seems to suggest otherwise.

The second reason probably has to do with the complexity of the process itself. In his book on aviation terrorism, John Harrison, asserts, "One of the more worrying developments over the last

¹⁸ Philippine National Police, "Tactical Interrogation Report of Abdul Hakim Murad," 9 January 1995.

decade and a half has been the maturation of liquid explosives.”¹⁹ And it should remain a concern. But it does not mean that it is easy to pull off. To wit, no similar plot using a liquid-based explosive was hatched until the 2006 trans-Atlantic plot 11-years later.²⁰ Home made chemical and liquid bombs are very different than lighting a detonating cord, using a manufactured military or mining-grade explosive, or even mixing diesel fuel with ammonium nitrate.

Liquid explosives are extremely volatile and difficult to manufacture. Just because a range of chemical explosives can be made from readily available retail store bought chemicals and other components does not mean that they are easy to make. The formulas, ratios, cooking temperatures and times must be exact. While Yousef was able to do it once successfully in a small apartment kitchen in Manila with mundane household equipment and utensils, it was still a very difficult substance to handle. Indeed, that was what brought the plot down: the chemicals could not be cooled quickly enough and caught fire. Otherwise the plot would likely have proceeded as planned. A dingy apartment kitchen in a third world country with regular electric blackouts is not the ideal place to mix volatile chemicals.

The chemical refining process to purify store bought chemicals is difficult. For example, the trans-Atlantic bombers were trying to develop their bombs on hexamethylene triperoxide diamine (HMTD), which is based on hydrogen peroxide. But store bough hydrogen peroxide is too diluted and thus it must be highly concentrated to become a component of HMTD. As *The New York Times* wrote about the trans-Atlantic plotters: “A chemist involved in that part of the inquiry, who spoke on the condition of anonymity because he was sworn to confidentiality, said HMTD, which can be prepared by combining hydrogen peroxide with other chemicals, ‘in theory is dangerous,’ but whether the suspects ‘had the brights to pull it off remains to be seen.”²¹ Likewise, the TATP shoe bomb of Richard Reid failed to go off, as did the second round of London bombings in July 2007, again using TATP. The attempted 2006 bombing of a German high-speed train went awry because the bomb-makers got the ratios slightly wrong and the bombs fizzled out; and in this case they were using a much simpler bomb design based on diesel fuel detonated by alarm clocks.²²

The manufacture of liquid explosives requires significant education and training, but also a controlled environment. After the August 2007 trans-Atlantic plot was thwarted by British security, and measures were put in place to restrict all liquids and gels on carry-on luggage, agents of the US Government Accounting Office, were able to manufacture liquid explosives and improvised incendiary devices from retail stores for roughly \$150 dollars and smuggle the explosives through airport security.²³ They proved that airlines are still vulnerable to liquid bombs that can be assembled from components carried on by passengers. But trained scientists manufactured the

¹⁹ John Harrison, *International Aviation and Terrorism: Evolving Threats, Evolving Security* (New York: Routledge, 2009), 54.

²⁰ In this case chemicals were hidden in hollowed out batteries hidden in a camera. They were to be injected into bottles of sports drinks with chemicals hidden in false bottoms. The two chemicals would create an explosion. For more on the August 2006 trans-Atlantic plot, see the *New York Times* website for the incident at http://topics.nytimes.com/top/reference/timestopics/subjects/t/terrorism/2006_transatlantic_aircraft_plot/index.html?scp=1&sq=uk%20transatlantic%20bomb%20plot%202006&st=cse.

²¹ Don Van Natta Jr., Elaine Sciolino and Stephen Grey, “In Tapes, Receipts and a Diary, Details of the British Terror Case,” *The New York Times*, 28 August 2006.

²² Andreas Ulrich, “Failed Bomb Plot Seen As Al-Qaida Initiation Test,” *Der Spiegel*, 9 April 2007.

²³ Government Accounting Office, Statement of Gregory D. Kutz and John W. Cooney, “Aviation Security: Vulnerabilities Exposed Through Covert Testing of TSA’s Passenger Screening Process,” Testimony before the Committee on Oversight and Government Reform, US House of Representatives,” 15 November 2007, at <http://www.gao.gov/new.items/d0848t.pdf>. For the video of the bombs they manufactured, see <http://www.gao.gov/media/video/gao-08-48t/>.

bombs in controlled labs. As someone in the first phase of the DTRA conference noted, scientists can become terrorists, but terrorists do not become scientists.²⁴

There is another parallel between Yousef's and the 2006 trans-Atlantic plot that speaks to the limits of innovation. Both plots were enormous in scale and logistical complexity. The trans-Atlantic plot sought to down eight planes en route to North America, which if successful would have killed between 2,500-5,000 people. Both sought to bring down multiple planes simultaneously, causing massive shock to a fragile world economy, the airline industry and the public psyche. While much of terrorism is symbolic, these plots went well beyond symbolism. They were weapons of *mass effect*. Yet, such complexity is beyond the reach of most terrorist groups.

Conclusion

In conclusion, Yousef's Bojinka plot, though it never was fully implemented, displayed considerable tactical innovation, as well as innovations in strategic objectives and organization. These innovations were made possible primarily due to Yousef's own entrepreneurial drive and ego, but also because of the small network, not organization, that he established to perpetrate the attacks. There is a paradox: the decentralized nature or lack of an organization allows for innovation, but limits the resources that the group has access to, or the resources that the group can bring to bear. His plan was ingenious, and only due to the technical complexity of the bomb design has it not been more widely replicated. Nonetheless, international aviation will continue to be a high priority target for politically motivated terrorists for the eight reasons John Harrison notes in his book.²⁵ As such liquid chemicals, with components hidden in carry-on luggage, are likely to be further refined and employed in the future. Better training, screening and wider use and further development of explosive trace detection equipment is necessary to combat this.

²⁴ *Terrorist Innovations in Weapons of Mass Effect*, Conference Report, August 2010, 10.

²⁵ 1. Aviation provides a powerful symbolic target; 2. It provides a unique multi-national stage; 3. It offers unrivaled media exposure; 4. Operations against it are relatively simple; 5. It has enormous economic consequences for both the carrier and the targeted nation; 6. It can create political embarrassment for the intended targets; 7. It is a useful tool for revenge; and 8. It is effective. Harrison, *International Aviation and Terrorism*, 49.

APPENDIX IV: M. KNIGHTS, BORN OF DESPERATION: AQI'S CHLORINE CAR BOMBS, 2006-2007

Abstract

Between 21 October 2006 and 1 July 2007, Al-Qaeda in Iraq (AQI) launched at least twenty car bombings in Iraq in which tanks of chlorine were deliberately used to create chemical weapon-type effects. Chlorine car bombs appear to have been used as a specialized sub-set of the general car bombing activities by a cluster of AQI cells. Chlorine bombs were thus primarily used to target anti-AQI tribal leaders in the security forces and local governance. Propagation by car bomb was a spectacularly bad method of dispersing chlorine gas and most of the chlorine-laced car bombs generated very limited toxic-by-inhalation hazards. Chlorine attacks were a highly localized phenomenon: the majority of identified chlorine attacks (fourteen of twenty) took place in Ramadi and Fallujah districts, west of Baghdad. Chlorine attacks were also limited to this time period: searches of extensive US military and civilian datasets from 2003-2011 do not show any chlorine attacks before October 21, 2006 and only one after July 1, 2007.

This paper aims to draw together the available data on the chlorine attacks and draw some tentative conclusions regarding AQI's adoption of chemical weapons. The chlorine attacks differed from other attempts by Iraqi insurgents to develop chemical weapons. Whereas previous chemical weapons research programs undertaken by the insurgents had faltered due to a lack of chemical agents or delivery mechanisms, the option of chlorine attacks had always been available to the insurgency due to the ease of access to chlorine tanks. It appears that chlorine use was limited to a certain moment in time, in a certain place, by a certain group of people. This makes it important to turn to the local political and operational context in the areas where the bulk of chlorine attacks were undertaken.

In the case of AQI's adoption of chlorine bombs, the primary driver appears to have been desperation as the organization fought to survive in eastern Anbar in late 2006 and early 2007. In particular, AQI needed to quickly regain the aura of intimidation it had maintained in eastern Anbar for years. If car bombings and assassinations were message sending, the chlorine attacks were a way of turning up the volume and regaining some of the shock effect that might break the will of the Awakening sheikhs. Quite literally, desperate times called for desperate measures.

As the raw materials were widely available and there was no technical barrier to undertaking chlorine attacks, the key factor restraining such attacks was the intent of the attacker. AQI's decision not to continue using chlorine-laced bombs after July 2007 may have been because such attacks were considered too ineffective or too controversial (or both) to employ more widely.



Figure 1: Eastern Anbar. The chlorine attacks were mainly concentrated in this area. The map shows the main roads, including Alternate Supply Route Golden, connecting eastern Anbar to the old Baathist heartlands of Tikrit and Salah al-Din province. In early 2006, Al-Qaeda in Iraq (AQI) maintained a powerful base of operations in the area between Ramadi, Fallujah and Karmah. By the end of 2006, tribal groups under Abdul Sattar al-Rishawi (Abu Risha) were using government arms and US money to fight AQI in Ramadi city. In the spring of 2006, AQI faced uprisings from nationalist insurgents in outlying tribal areas near Ramadi as well as Fallujah and Amiriya. The Al-Tai and Zobai tribes routed AQI by the summer of 2007.

Introduction

Between 21 October 2006 and 1 July 2007, Al-Qaeda in Iraq (AQI) launched at least twenty car bombings in Iraq in which tanks of chlorine were deliberately used to create chemical weapon-type effects. At that point, chlorine-laced car bombs had not been used before in the Iraq conflict, despite the detonation of thousands of car bombs in the years between 2003 and 2006, and despite the widespread availability of chlorine canisters. Nor were chlorine-laced devices used after July 2007 (except in one isolated case), despite the use of hundreds of car bombings and ongoing availability of chlorine containers.¹ The adoption of chlorine-laced car bombs was, therefore, arguably a deliberate tactical and operational innovation, quite localized in design and execution. It offers an interesting case study of the conditions that drove one sub-state group to adopt chemical warfare as a tactic – and also to ultimately discontinue the tactic.

The aim of this paper is to highlight the available evidence concerning the series of chlorine car bombings and to draw tentative conclusions from this evidence. This paper utilizes no classified

¹ There was one chlorine-laced bombing outside the period – an attack that was foiled on the Syrian-Iraqi border at Husaybah on 22 November 2009. Other than this outlier, there is no other chlorine bombings recorded in the Coalition Significant Actions (SIGACTs) datasets held by Olive Group, and made available to the author for this academic not-for-profit research. These records do not show any chlorine attacks before October 21, 2006 or after July 1, 2007 (aside from the Husaybah attack). Nor are there any open source reports of chlorine attacks outside this date range. Such attacks may have taken place but due to the unusual nature of such attacks they probably would have been detected and reported. This suggests that the phenomenon was indeed entirely limited to this time period.

materials, to the best of the author's knowledge. The author does not hold a US security clearance and has made no use of any classified data. The author has not directly interviewed any AQI detainees or seen any classified detainee transcripts that may be held by government agencies. Instead, the author has used journalistic means to determine the facts. The private security industry has maintained Significant Action (SIGACT) databases in collaboration with Multinational Forces Iraq (now US Forces Iraq) since 2003, and the author has access to some of those datasets.² Likewise, the private security industry has undertaken analytical studies on Al-Qaeda in Iraq and its tactical evolution (including chlorine bombings), and the author has collected many of these documents. Finally, much has been written in open sources about the chlorine bombings and the status of AQI in 2006-2007, including new reporting and some specialized analyses in publishing houses such as Jane's.³ Interview material has been used to supplement these sources, where time and availability of interviewees allowed.⁴

Identifying chlorine attacks

By interrogating the SIGACT database held by Olive Group, a security provider continually operational in Iraq since May 2003, and comparing this dataset to open source and private industry reporting of chlorine bombings, it is possible to identify twenty incidents that appear to have been deliberate chlorine car bombings (successful or foiled). The author defines chlorine-laced car bombings as any use of a Vehicle-Borne Improvised Explosive Device (VBIED) where chlorine canisters were deliberately included in the payload with the apparent intent of causing additional casualties via a toxic inhalation hazard.⁵

It is worth differentiating between these attacks and incidents where chlorine tanks may have been added to car bombings purely to increase the explosive or incendiary payload of a device. From the beginnings of the insurgency in Iraq, attackers had "boosted" car bombs with all manner of combustible materials. Heaps of ordnance, including valuable military items like functional Man-portable Air Defence System (MANPADS) warheads, were loaded into trucks and detonated.⁶ Liquefied Petroleum Gas (LPG) cylinders, used in most Iraqi homes as cooking gas, were frequently added to car bombs as a "booster", though such cylinders tended to be blown from the blast site without detonating, often without even being ruptured. Oxy-acetylene welding cylinders were also used occasionally in car bombs, once again to "boost" the size of the main charge and perhaps for anticipated incendiary effect.⁷

² The SIGACT database maintained by Olive Group, the longest serving private security company in Iraq, contains over three hundred thousand individual geolocated SIGACTs. These can be displayed on commercial geospatial information systems like Google Earth and overlaid on military mapping, compared to other datasets of military and civilian placemarks, and blended with information on human terrain such as tribal mapping. Some of the SIGACT data held by companies like Olive is similar to the records released in the Iraq War Logs section of the Wikileaks datasets.

³ Special thanks should go to Jeremy Binnie, editor of the Jane's Terrorism and Insurgency Centre (JTIC) and Richard Evans, founding editor of JTIC and now a Strategic Communications Consultant and Visiting Fellow at the United Kingdom Defense Academy. He specializes in the use of strategic communication to counter violent extremism.

⁴ Special thanks should be expressed for all the persons who have supported this work, including both those who can be identified and those who are serving in government and cannot be quoted by name.

⁵ Chlorine presents a toxic-by-inhalation hazard to humans. When pressurized, chlorine is a liquid but upon depressurization it becomes a heavier than air vapor cloud. The gas causes irritation to sensitive tissue in the human body such as the eyes, nasal passages and lungs. Prolonged exposure to high concentrations of the gas results in incapacitation and can cause death.

⁶ Michael Knights, "Unfriendly skies: Iraq's Sunni insurgents focus on air defence," *Jane's Intelligence Review*, May 2007, p. 16.

⁷ Olive's datasets describe numerous car bomb payloads containing pressurized cylinders, usually LPG bottles or oxy-

Thus it is possible that car bombs had included chlorine tanks prior to October 2006, with chlorine cylinders misidentified as other forms of pressurized cylinder or merely lumped in with other explosive matter and scrap metal. One of the two main types of chlorine cylinders in Iraq, the 150lb variety, is a tall cigar-shaped canister that is similar in appearance to other types of industrial gas canister (such as some oxy-acetylene or butane tanks). Some oxy-acetylene or butane tanks are also bright yellow, like chlorine canisters. In some cases, trucks carrying chlorine canisters to water purification sites were damaged, resulting in chlorine releases.⁸ Accidental releases of chemical agents by insurgents has occurred occasionally since 2003: Saddam-era chemical weapons artillery rounds appear to have been unintentionally used in roadside bombings and others may have been unintentionally used in car bombings.⁹

As neither AQI nor its newly established umbrella movement, the Islamic State of Iraq (ISI) claimed operations involving chlorine-laced car bombs in 2006-2007, is it possible that the attacks were another unintentional use of hazardous chemicals by a bomb-making cell with a stock of chlorine tanks on hand? This is unlikely for a number of reasons:

- First, the toxic inhalation hazard caused by the chlorine-laced car bombs was immediately publicized by Multinational Forces Iraq and by the Iraqi government, yet AQI cells continued to utilize the tactic for at least a further four months, during which time a further seventeen chlorine attacks were launched.¹⁰
- Second, insurgents had been experimenting with chemical payloads for car bombs in the lead-up to the chlorine attacks. Lt. Gen. Ray Odierno the commander of Multinational Corps-Iraq, stated on February 22, 2007, “we have found over the last year or so, couple of years, attempts of them to try to use all different types of chemical mixtures in order to try to make VBIEDs more lethal, and this is just another way to do it.”¹¹
- Third, chlorine-laced car bombings in the first half of 2007 included very large one-ton pressurized chlorine tanks rather than the smaller 150lb tanks. These vessels are very difficult to misidentify and require a considerable effort to transport. Their capacity, unlike the small 150lb tanks, is sufficient to release major concentrations of chlorine gas in intentional chemical weapons attacks.¹²

Taking these factors into account, it is somewhat incredible to imagine that AQI was unaware of the toxic inhalation hazard caused by their devices, and in fact they seemed to be

acetylene canisters.

⁸ Olive’s SIGACT database shows a roadside bomb attack on February 4, 2005 at 0740hrs in Hillah. The attack occurred near an industrial complex and shortly afterwards, there appeared to have been a chlorine gas release due to damage to a passing tanker.

⁹ See multiple examples in Michael Knights, JTIC Briefing: Chlorine Bombs in Iraq, Jane’s Terrorism and Insurgency Centre, February 28, 2007.

¹⁰ The toxic effects of January 28, 2007 attack in Ramadi were evident to all, with US forces and Iraqi troops wearing gas masks at the site for days after the attack. The US military began to publicize incidents during February. See the statement by Lieutenant Colonel Christopher Garver, Multinational Forces spokesman, reported in Damien Cave and Ahmad Fadam, “Iraq Insurgents Employ Chlorine in Bomb Attacks,” *New York Times*, February 22, 2007.

¹¹ DoD News Briefing with Lt. Gen. Odierno From Iraq, U.S. Department of Defense Office of the Assistant Secretary of Defense (Public Affairs) News Transcript, February 22, 2007, available at <http://www.defense.gov/Transcripts/Transcript.aspx?TranscriptID=3893>.

¹² The 150lb and one-ton chlorine tanks are identifiable to most menfolk in Iraqi towns as they are such a common feature of village and urban life, with government trucks replenishing the stocks at local water treatment plants on a regular basis. Other types of container, such as oil drums and the drums used to store corrosive or toxic agents such as nitric acid, look markedly different in shape and color.

deliberately (and at some added effort) including multi-ton consignments of chlorine in a portion of their car bombings each month in the first half of 2007.



Figure 2: One-ton (840 liter) chlorine tanks at a major water treatment plant in Iraq. Almost all one-ton tanks found in Iraq are this model and are painted yellow.



Figure 3: One-ton chlorine tank found in AQI bomb-making cache in Karmah on February 21, 2007.



Figure 4: Multiple one-ton chlorine tanks loaded onto a rigged truck bomb that was intercepted on March 23, 2007.

The sequence of chlorine attacks in 2006-2007

The spreadsheet in Annex 1 provides a listing of the chlorine car bomb attacks that were identified to a good degree of certainty by the author. As stated, there may be more attacks than have been detected, and some foiled attacks may never have been detected. A few attacks – notably the first and last – may not have been initiated with serious intent to cause toxic effects.

For instance, the first listed chlorine bombing on October 21, 2006 utilized a small amount of chlorine gas canisters and does not appear to have caused toxic-by-inhalation injuries. Was the attack an intentional chlorine-boosted chemical weapon strike? Did an accidental use of chlorine give Al-Qaeda in Iraq the idea to use chlorine? Or was a deliberate decision made to add chlorine tanks to a VBIED? Was the pause in recorded chlorine attacks (between October and January) significant? Unless documentary or interrogation data exists in some classified file and is one day released, we may never know the answers to these questions about the start of the sequence of chlorine bombings.

January 28, 2007 is a more reliable start point for the sequence of chlorine attacks. On that day a large a suicide car bombing targeted a new Emergency Response Unit (ERU) barracks in Jazeera neighborhood, northern Ramadi, and the device incorporated a one-ton chlorine tank.¹³ Another attack then took place on February 19, 2007 at a checkpoint just 2.7km from the prior

¹³ As later sections note, the ERU were a newly formed set of units that permitted tribal and local collectives to hunt down Al-Qaeda within their local communities, independently of the US military.

attack. It is unclear whether the checkpoint was the target of the attack or, more likely, had flagged the driver down and prompted him to pre-detonate the device. This attack also utilized a one-ton chlorine tank.

Immediately after this event, a series of chlorine-related incidents took place in and around western Baghdad. On February 20, a large chlorine truck bomb (two one-ton containers) detonated at a truck stop on Expressway 1 north of Baghdad. It is unknown whether the device may have malfunctioned in transit or whether the truck stop was the target. On February 21, one car bomb detonated at a fuel station in western Baghdad with 150lb chlorine tanks on board. Around the same time, car bomb factories were discovered on February 20 and 22 near Karmah (a key AQI logistical hub northwest of Baghdad) and another in Fallujah on February 21. All of these locations contained one-ton chlorine tanks.¹⁴ The US military claimed that the car bomb locations contained Al-Qaeda in Iraq propaganda materials and manuals.¹⁵ Another car bomb containing 150lb chlorine tanks was recovered from a cache in western Baghdad on March 3. A final Baghdad car bomb workshop with chlorine tanks is uncovered at an undisclosed date in late March after the discovery of a massive five-ton chlorine device in Jazeera neighborhood, northern Ramadi on March 23. One day earlier, the Islamic State of Iraq – the umbrella movement controlled by AQI – formally denied that the movement was involved with chlorine attacks.¹⁶

Amidst scattered chlorine attacks between March and July 2007, the triple bombing on March 16, 2007 stands out. This attack saw the homes of three key tribal leaders targeted by AQI, though none of the three attacks was successful. The March 28 double chlorine VBIED attack against the Fallujah municipal center was also notable. In late April and May, occasional chlorine attacks occurred west of Ramadi in the lands of Abd'al-Sattar al-Rishawi (Abu Risha), the tribal sheikh leading the fight against Al-Qaeda. The sequence of identifiable chlorine attacks in Anbar ends on July 1 with an attempted double suicide bombing against a bridge. In this case, the use of chlorine tanks appears to have been relegated once again to a mere afterthought – a few small tanks added to a massive explosive main charge alongside other items such as oxy-acetylene canisters.

Two chlorine attacks occurred in May and June that fell outside the eastern Anbar and western Baghdad area. These were both in Diyala province, a key AQI battleground northeast of Baghdad. On May 15, a chlorine bomb was detonated at a Shiite market in Abu Sayda and, on June 3, a very large chlorine device was used to blanket a US base with toxic fumes. A large cache of chlorine containers was found in an AQI cache in Diyala on February 1, 2008.¹⁷

Tactical analysis of the attacks

Chlorine car bombs appear to have been used as a specialized sub-set of the general car bombing activities of AQI cells in the western and northwestern arc of the Iraqi capital. Aside from

¹⁴ Kamryn Jaroszewski, "509th PIR nets cache, saves lives," *Alaska Online*, March 9, 2007, available at <http://www.usarak.army.mil/alaskapost/Archives2007/070309/Mar09Story3.asp>. Also see

Bill Roggio, "Another chlorine truck bomb found near Ramadi," *Long War Journal*, March 27, 2007. Available at http://www.longwarjournal.org/archives/2007/03/another_chlorine_tru.php#ixzz1YSKyMV01 ;

Donna Miles, "Iraqi Tips Lead to Bomb Factory Discovery," American Forces Press Service, February 26, 2007, available at <http://www.reuters.com/article/2007/02/24/us-iraq-chemicals-qaeda-idUSPAR44485120070224> .

¹⁵ Silvia Aloisi and Robin Pomeroy, "U.S. says Iraq chlorine bomb factory was al Qaeda's," Reuters, February 24, 2007, available at http://thestar.com.my/news/story.asp?file=/2007/2/25/worldupdates/2007-02-24T190800Z_01_NOOTR_RTRJONC_0_-289057-1&sec=Worldupdates .

¹⁶ "Islamic State of Iraq Issues Statement Regarding Chlorine Attacks, Operations in Amiriyat al-Fallujah," SITE Intelligence Group, March 22, 2007, available at <http://siteinstitute.wsone.com/bin/articles.cgi?ID=publications264807&Category=publications&Subcategory=0> .

¹⁷ Richard Tomkins, "Report: GIs Exposed to Chlorine Gas," *Washington Times*, January 31, 2008.

outlying cases in Baghdad and Diyala, the majority of identified chlorine attacks (fourteen of twenty) took place in Ramadi and Fallujah districts, west of Baghdad. This concentration points to a highly localized adoption – and perhaps localized genesis – of the chlorine car bomb, a type of attack that has been notably absent in other key AQI operating areas (Mosul, northern Babil and Wasit, the Western Euphrates River Valley and the Hamrin mountain range).

It is difficult to be certain regarding the exact target selection of every planned or executed chlorine bombing. Four of the twenty known chlorine incidents saw the devices detonated at checkpoints or transit locations that may not have been the intended targets. Four devices were found and defused. Of the remaining incidents with identifiable targets, five attacks were targeted on tribal sheikhs, one on a police unit graduation attended by tribal leaders, and one on a municipal government center (where anti-AQI sheikhs had just been appointed into leadership positions). Chlorine bombs were thus primarily used to target anti-AQI tribal leaders in the security forces and local governance.

It is clear that chlorine bombings did not achieve spectacular destructive results in terms of casualties. In most of the cases, large conventional explosive charges accounted for the bulk of the casualties inflicted. As a February 2007 article noted, “Chlorine thins rapidly, particularly in strong winds, and needs to be released in dense clouds to have lethal effect. The rapid expansion of explosive gases seems to have rapidly dispersed the relatively small amounts of the gas used in recent VBIEDs. The heat of the explosions also may have burned off the gas, reducing its effect.”¹⁸

Propagation by car bomb was a spectacularly bad method of dispersing a gas that function most effectively with significant atmospheric stability, low wind speeds and median air temperatures. Five attacks resulted in over fifty casualties, but the blast effects caused the bulk of these injuries in all but one case (the deviant case being the attack on the US base in Diyala, when over sixty US soldiers reported breathing difficulties). The actual numbers of persons suffering from skin or eye irritation and breathing difficulties in the other incidents will probably never be known but it is unlikely that many victims experienced greater than the thirty to sixty parts per million (ppm) of chlorine gas required to cause permanent lung damage.

AQI varied the chemical payloads it used in different attacks. The payload could not be identified in six cases, but in others the Olive SIGACT database indicates the size of canisters used. Five cases involved multiple 150lb chlorine canisters, usually two cylinders. Four attacks included single one-ton containers. In two cases the attackers planned to use a pair of one-ton containers. One major attack foiled on March 23 involved a device with four tons of chlorine on board. For all this effort, it is notable that the most effective form of dispersion – a gradual release of chlorine gas in an urban area at night, perhaps taking advantage of cooler air and an absence of wind – was never utilized by AQI. Extrapolating from studies undertaken in the west, a five-ton chlorine release under optimal conditions could have produced high numbers of casualties, including perhaps as many as a thousand fatalities in a densely populated area.¹⁹ Thus, rather than developing true chlorine dispersal devices, AQI undertook chlorine-laced car bombings.

It is also notable that almost none of the devices detonated at the optimal distance from their targets, and almost half the devices did not reach their detonation point at all due to being discovered or intercepted en route. This is a testament to the density of checkpoints and their effectiveness when run by local community police auxiliaries guarding their own “turf.” The high

¹⁸ Michael Knights, JTIC Briefing: Chlorine Bombs in Iraq, Jane's Terrorism and Insurgency Centre, February 28, 2007.

¹⁹ See the modeling in Benjamin H. Brodsky, *Industrial Chemicals as Weapons: Chlorine*, James Martin Center for Nonproliferation Studies, Monterey Institute of International Studies, July 31, 2007, pp. 30-31. This suggests that 17 tons of chlorine released under optimal conditions might cause between 4,000 and 30,000 fatalities. I have used the lower figure to base my rough calculation.

interception rate may have been aided by the conspicuous appearance and size of chlorine cylinders. This low delivery rate may also be a reflection of US-Iraqi disruption of AQI networks and car-bombing workshops in particular.

Summing up the “chlorine campaign” that mainly took place between February and April 2007, it appears that a cluster of geographically related car bombing networks adopted chlorine-laced devices in a significant proportion of their attacks. (It should be noted that, according to Olive’s datasets, of 58 VBIEDs in Ramadi and Fallujah districts between January 28 and July 1 2007, thirteen were chlorine-laced, see Annex 2.)

The use of chlorine was a prolonged campaign that spanned multiple months. It was a determined effort and was not abandoned quickly. The primary targets for the chlorine bombs were Iraqi tribal leaders from the Sunni Arab community in Ramadi and Fallujah. The most determined and ambitious use of chlorine payloads occurred in March 2007 with the attempted March 16 triple attack, the large five-ton device found on March 23 and the March 28 attack on the Fallujah council. Thereafter the campaign slowly ground to a halt.

However, the AQI networks seemed equivocal in their faith that chlorine attacks would be tactically effective. In their use of chlorine-laced car bombs rather than chlorine dispersal devices, they clearly did not embrace the notion of “pure” chemical warfare attacks designed to disperse chlorine in the most efficacious manner possible. Instead they incorporated chlorine into their tried and tested tactics of ½ to one-ton suicide-initiated car bombs. The “chlorine effect” may have been viewed as a bonus effect and there is no evidence that bomb-makers sought to evolve their devices or tactics to produce better chemical weapon effects.

Internal causes / drivers

With the sequence of events established, and certain tactical trends identified, this paper will turn to the main question: why did AQI innovate by fielding the chlorine-laced car bomb? In terms of internal causes and drivers, the genesis of the idea could have come from either Saddam-era military personnel, or foreign and Iraqi Al-Qaeda fighters, or some civilian chemical industry expert, or some combination of these, or none of these.

Former regime insurgents and chemical warfare

The chlorine attacks were not the first time that Sunni insurgent factions in Iraq had dabbled in chemical warfare. More than most nations, Iraq had a legacy of experience in chemical warfare. During the eight-year Iran-Iraq War, the Saddam-era military made extensive battlefield use of blister agents such as mustard gas and blood agents (nerve gases) such as Sarin and Tabun. Indeed, insurgents appear to have accidentally utilized incorrectly labeled chemical artillery shells in roadside bombs.²⁰ On 2 May 2004, explosives ordnance disposal troops located a roadside bomb consisting of a 155mm artillery round in Abu Ghraib (between Baghdad and Fallujah). It was leaking some form of liquid and subsequent analysis showed that the shell contained mustard gas. Coalition personnel showed some signs of exposure – blurred vision and nausea – but appear to have escaped serious effects because the munition did not explode and because of the degradation of the agent over time.²¹ As late as August 2008, US military records describe an “AQI cache” being recovered

²⁰ *Addendums to the Comprehensive Report of the Special Advisor to the DCI on Iraq’s WMD*, US Government, Washington DC, March 2005. p. 20. Available at http://www.globalsecurity.org/wmd/library/report/2005/isg-addendums_mar2005.pdf.

²¹ Michael Knights, JTIC Briefing: Chlorine Bombs in Iraq, Jane’s Terrorism and Insurgency Centre, February 28, 2007.

that included 26 filled 155mm chemical weapon artillery rounds (probably mustard gas), including fourteen leaking rounds.²²

Perhaps building on Baathist-era military experience, some elements of the Sunni insurgency seems to have sought out a means to undertake chemical weapon bombardments of US bases in Iraq. According to the Iraq Survey Group, the al-Abud network of the Jaish Muhammad militia recruited an inexperienced Baghdad chemist in late 2003 to develop chemical and biological agents using precursors bought from Baghdad's chemical souk and from farmers who looted malathion pesticide from state companies. The organization tried unsuccessfully to manufacture the blood agent Tabun as well as mustard gas before successfully making small amounts of Ricin shortly before the network was uncovered and disrupted. Jaish Muhammad – an insurgent group drawn from the former regime and its military – sought to develop reliable delivery systems as well, including functional binary mustard gas mortar rounds. Fortunately, most of Iraq's pre-1991 stocks of chemical weapon warheads (for instance 122mm Borak warheads) were either destroyed before 2003 or were successfully recovered in buyback operations in 2004.²³

Between 2005 and 2007, Sunni insurgents claimed to be able to use chemical weapons to bombard US bases on a number of occasions. On September 11, 2005, the Army of the Victorious Sect threatened to use “non-conventional and chemical weapons” against government targets unless a US security operation in Tall Afar was suspended.²⁴ On September 13, the same movement claimed to have launched five “chemical rockets” at the Ministry of Interior, Ministry of Foreign Affairs, the police academy and the International Zone in Baghdad.²⁵ On September 14, 2005, the Islamic Army in Iraq (IAI) at that time still affiliated with Abu Musab al-Zarqawi's movement – claimed to have attacked a US base in al-Madain district with “ten 120mm Hawn chemical mortar rounds.”²⁶

A US military report from June 10, 2006 notes that insurgents planned “to attack a forward operating base in Karmah with chemical weapons...The insurgents plan to deploy their chemical weapon using mortars as a delivery system.”²⁷ On January 10, 2007, as the chlorine attacks began, Sunni militants continued to experiment with chemical rockets. On that date, the Salahadin al-Ayyubi Brigades, the military wing of JAMI, Al-Jabha al-Islamiyya l'il-Muqawama al-'Iraqiyya, claimed to have fired four 57mm rockets loaded with chemicals against a US base in Samarra. The organization posted a film showing militants wearing gas masks and filling the missiles with a liquid, which the organization claimed was an unspecified chemical weapon.

²² Iraq War Logs, Redacted Report 4-2, August 16, 2008, available at <http://www.iraqwarlogs.com/PDF/4/2.pdf>.

²³ *Addendums to the Comprehensive Report of the Special Advisor to the DCI on Iraq's WMD*, US Government, Washington DC, March 2005. p. 20. Available at http://www.globalsecurity.org/wmd/library/report/2005/isg-addendums_mar2005.pdf.

²⁴ Evan Kohlmann, “Communiqué from the Army of the Victorious Sect,” September 11, 2005. Available at <http://www.globalterroralert.com/images/documents/pdf/0905/taefamansoura0905.pdf>.

²⁵ Ibid.

²⁶ Evan Kohlmann, “Communiqué from the Islamic Army in Iraq (IAI),” September 14, 2005. Available at <http://www.globalterroralert.com/images/documents/pdf/0905/islamicarmy0905.pdf>.

²⁷ Bureau of Investigative Journalism, “Al Qaeda in Iraq seize Saddam's chemical weapons,” October 14, 2010, available at <http://www.iraqwarlogs.com/2010/10/14/aqi-and-chemical-weapons/>.



Figure 5: Screen grabs from January 10, 2007 video purporting to show 57mm S-5K rockets being mounted with improvised warheads that are filled with an unidentified chemical agent.

Al-Qaeda in Iraq, chemical weapons and Fallujah

The Sunni insurgency also drew on latent interest in chemical weapons by some elements of Al-Qaeda in Iraq. From 1998 onwards a range of Al-Qaeda ideologues gave their rhetorical support to the development of chemical and biological weapons.²⁸ Since 2002 a range of jihadist elements have been accused of developing chemical or biological weapons. Traces of both ricin and botulinum were found at the Ansar al-Islam hamlet of Sargat in April 2003 and German reporters recovered a handbook pointing to successful development of ricin and cyanide gas, although attempts to produce mustard gas and VX nerve agent appear to have failed.²⁹

This interest was carried forward after 2003 by elements of Al-Qaeda in Iraq. When parts of Fallujah fell to US forces on November 23, 2004, US forces uncovered what was described as a chemical weapons factory, collocated with an explosives workshop.³⁰ Against a backdrop of the banner of Abu Musab Zarqawi's group Tawhid and Jihad, the rudimentary laboratory contained Mujahideen "How to Cook Book" guidebooks downloaded from the internet on the creation of

²⁸ For a good review of these statements see René Pita, *Assessing al-Qaeda's Chemical Threat*, Athena Paper, Vol. 2, No 2, Article 3/5, April 17, 2007, available at www.athenaintelligence.org.

²⁹ Michael Knights, JTIC Briefing: Chlorine Bombs in Iraq, Jane's Terrorism and Insurgency Centre, February 28, 2007.

³⁰ For images from the workshop, see "Fallujah Update: Insurgent Chemical/Explosives Weapons Laboratory," Multinational Forces Iraq, November 26, 2004, available at www.globalsecurity.org/wmd/.../fallujah-cw_cpjc_26nov2004.ppt.

chemical weapons and notebooks in Arabic where details concerning anthrax and blood agents had been transcribed. Precursors for the blood agent hydrogen cyanide were found in the laboratory, including potassium cyanide and hydrochloric acid. Potassium Cyanide is a severe poison solid compound that, when mixed with an acid, produces a poisonous gas. Hydrogen cyanide is extremely poisonous in both vapor and liquid form.³¹

The insurgents were preparing for a second assault on the city of Fallujah and were seeking to develop all and any means of defending the area. As the Iraq Study Group's 2005 addendum noted: "an insurgent captured in Fallujah stated, 'If we had chemical weapons, we would have used them.'"³² The aforementioned materials are believed to have been intended for use in improvised chemical devices (ICDs). In March 2007, as the chlorine bomb attacks were drawing attention to the issue of chemical warfare, an unnamed US military official told a reporter, "We've seen them use caustic acid with improvised explosive devices to burn the skin," adding that although the acid does not increase the lethality of a bomb, it does make it "nastier."³³

As noted previously, on February 22, 2007 Lt. Gen. Ray Odierno the commander of Multinational Corps-Iraq, also noted "attempts of them to try to use all different types of chemical mixtures in order to try to make VBIEDs more lethal."³⁴

Arguably the chemical warfare research being undertaken in Fallujah was fit-for-purpose considering the priorities of the movement – i.e., to undertake a major stand in the fast-approaching second battle of Fallujah. Zarqawi's followers sought a far lower level of capability than the former regime elements that attempted to create chemical artillery capable of hitting US bases. Instead the jihadists were aiming to utilize a mixture of cyanogens chloride (CK), hydrogen cyanide (HCN), and hydrochloric acid (HCl) to create a crude chemical weapon that could be activated either by an explosion or by simply throwing or dropping it. Such devices would work best when detonated in a contained inside area making them potentially very useful in a static urban fight such as the defense of Fallujah. The mixture would disrupt the oxidative processes of the body and act as a local irritant to the eyes, the upper respiratory tract, and the lungs.³⁵

Were the chlorine attacks in any way linked to this earlier process of innovation by AQI? In one sense, yes: the wellspring of innovation again appears to be Fallujah and surrounding areas judging by the positioning of car bomb-making workshops and attack sites involving chlorine payloads. The idea of using a simple choking or irritating agent also might have been influenced by the research undertaken in Fallujah in 2004.

The chlorine industry and Fallujah

Alternatively, the use of chlorine may have resulted from issues unrelated to the earlier Al-Qaeda chemical warfare experiences in Fallujah. For instance, the Fallujah area was, for many years, the location of Iraq's largest chlorine manufacturing plant. Weapons inspectors throughout the

³¹ Ibid.

³² *Addendums to the Comprehensive Report of the Special Advisor to the DCI on Iraq's WMD*, US Government, Washington DC, March 2005. p. 22. Available at http://www.globalsecurity.org/wmd/library/report/2005/isg-addendums_mar2005.pdf.

³³ Sharon Behn, "Chlorine cache found in Iraq," *Washington Times*, March 23, 2007.

³⁴ DoD News Briefing with Lt. Gen. Odierno From Iraq, U.S. Department of Defense Office of the Assistant Secretary of Defense (Public Affairs) News Transcript, February 22, 2007, available at <http://www.defense.gov/Transcripts/Transcript.aspx?TranscriptID=3893>.

³⁵ Michael Knights, JTIC Briefing: Chlorine Bombs in Iraq, Jane's Terrorism and Insurgency Centre, February 28, 2007. Tawhid and Jihad elements were also accused of planning to use a chemical IED in Jordan in 2004. Suspected militants arrested in Jordan told interrogators that they were informed they would take part in the "first chemical attack by al-Qaeda," though no further substantiation was provided.

1990s at the Fallujah II facility strictly monitored Iraq's limited chlorine production. The facility housed stocks of chlorine that Iraq had over-produced and was being restored to its earlier capacity as war broke out in 2003.³⁶ Persons with experience of chlorine's dangerous effects – locals or industrial workers – could have inputted ideas.



Figure 6: Chemical industry locations near Fallujah.

³⁶ Fallujah II / Habbaniyah II, GlobalSecurity.org, Available at http://www.globalsecurity.org/wmd/world/iraq/fallujah_2.htm.

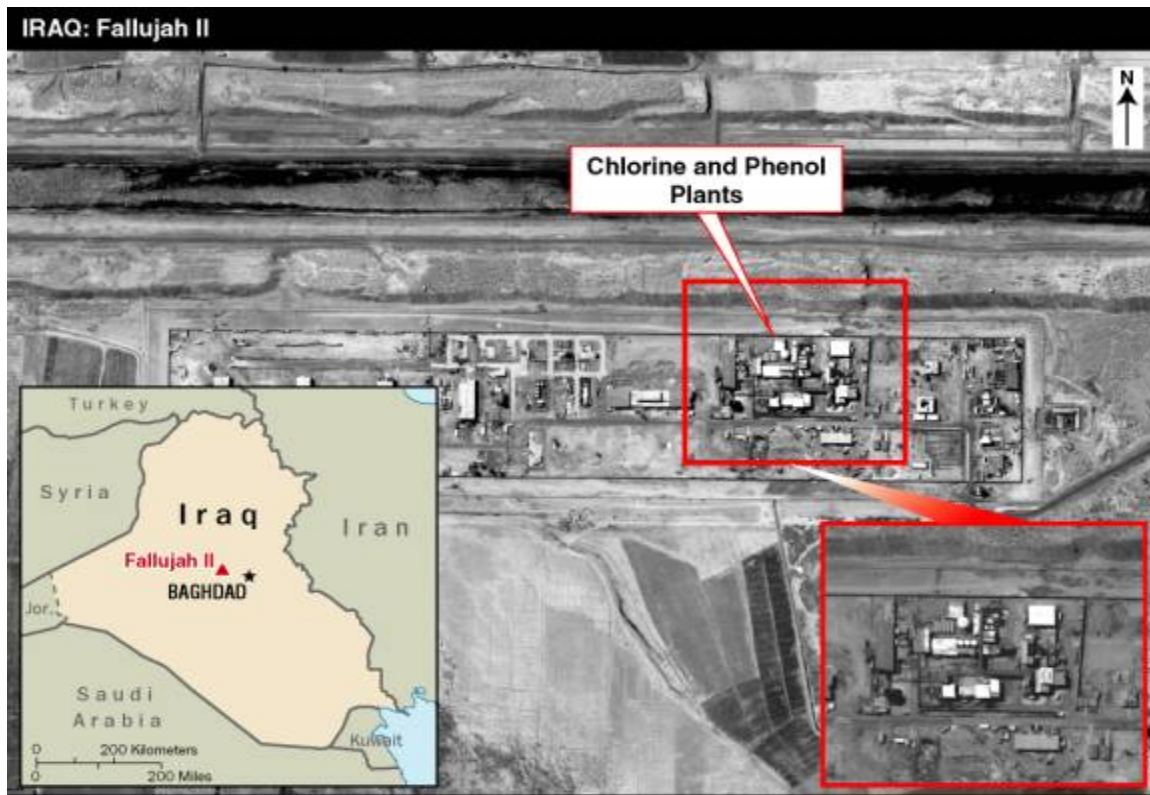


Figure 7: Fallujah II site in detail.



Figure 8: One-ton chlorine canisters unsecured at Fallujah II in October 2003. Note the presence of the two main types of one-ton container as well as 150lb cylinders.

Yet whilst this special connection between Fallujah and chlorine use might have been significant, it should not be overstated. Chlorine is used in every Iraqi city and major town within water treatment plants. As stated, the bright yellow 150lb cigar-shaped cylinders and 1-ton chlorine tanks are familiar pieces of equipment across Iraq. Chlorine tanks were dispersed across the country at water plants and were largely unguarded (and remain unprotected to this day).³⁷ The toxic risk posed by chlorine was well understood in most Iraqi communities before 2003 when accidental releases of chlorine gas regularly caused injuries. Even today, major chlorine leaks are a regular occurrence. On July 13, 2011 a chlorine tank accidentally ruptured in Sadr City, Baghdad, injuring two hundred people, and on September 3, a leak killed two people in Baqubah, Diyala.³⁸

Former regime/ AQI hybrid?

One interviewee with good access to former insurgents offered very specific information on the genesis of the chlorine attacks. Attributing the information to “an Iraqi intelligence officer” asked specifically about the genesis of the chlorine attacks, the interviewee stated:

The chlorine bombs were the work of Dr. Ziyad Tariq Taha al-Jabouri, a chemical engineer, born 1967, worked in biological weapons in the Military Industrialization ... He is from a proper Baghdadi family, from Karkh, who settled here in the 1800s. His present family home in the Bejiya neighborhood near Mansour. His sisters, until recently, weren't wearing headscarves, so the family was quite liberal. Ziyad's wife began to wear the hijab only in 2004. Since 1997, he began frequenting the nearby Ali al-Salih mosque, where the preacher was “Abu Abdullah”, Sheikh Ibrahim Awwad Ibrahim al-Badri al-Samara'i, who is now “Abu Bakr al-Baghdadi”, leader of the ISI. In August 2005, Abu Musab al-Zarqawi established a “factory” for Ziyad to begin producing these chlorine bombs, in a chicken farm in the Sheeha area of Taji. The principal source for their chlorine was the Baghdad water treatment plants, one of which, I think, is near them. They would also buy this on the open market.³⁹

The data cannot be checked against other sources, but does point to a credible scenario: that a scientist active under the former regime provided assistance to AQI in their chlorine attacks. This piece of information would suggest that AQI believed that chlorine could be utilized as a chemical weapon from as early as 2005.

There seem to be plenty of internal causes and drivers to interest AQI in chemical warfare and specifically in chlorine attacks in the Fallujah area. But this does not explain why Al-Qaeda chose to adopt chemical warfare when it did. If insurgents wanted to undertake chlorine attacks, they could have done so at any time, and still could today, yet there has been just one report of chlorine attacks outside the October 2006 to July 2007 period.

A further internal factor restraining the use of chlorine may have been an underestimation of its potential lethality if used as a weapon, which is far higher than might be suggested by the numbers of casualties experienced in accidental releases. In comparison, most groups were doing well enough with conventional weaponry and may not have felt the need to innovate. Another disincentive might have been the difficulty of deploying such a weapon against US forces without

³⁷ The Olive Iraq datasets include multiple descriptions of water treatment plants with minimal protection and include many images of 150lb and 1-ton chlorine tanks located at unguarded rural sites.

³⁸ “Chlorine gas leak strikes Iraq's Sadr city,” Euronews Agency, July 13, 2011, available at <http://www.euronews.net/2011/07/13/chlorine-gas-leak-strikes-iraq-s-sadr-city/> . Also see “Two killed in violence, 20 poisoned by chlorine gas in Iraq's Diyala,” Xinhua Agency, September 3, 2011, available at http://news.xinhuanet.com/english2010/world/2011-09/03/c_131095837.htm .

³⁹ Michael Knights, email interview with Iraq analyst, October 15, 2011.

affecting large numbers of civilians, recalling that insurgents previously sought to use chemical weapons against US forces in their bases (via artillery or rocket fire) or in civilian-free environments such as besieged Fallujah.

Yet the chlorine bombing campaign shows that these restraining factors were overcome in one particular area (eastern Anbar and western Baghdad) and during one period (January to July 2007). In fact, AQI went further than ever before by deliberately targeting chemical weapons of Sunni Arab civilians (not US forces). Why? It appears that chlorine use was limited to a certain moment in time, in a certain place, by a certain group of people. This makes it important to turn to the local political and operational context in the areas where the bulk of chlorine attacks were undertaken.

External causes and drivers: local context in eastern Anbar, 2006-2007

The situation in eastern Anbar in late 2006 and early 2007 provides key insights into the pressures that AQI were facing as they adopted chlorine attacks. Desperation and a bitter fight for survival seem to have been an important driver of AQI's use of chemical warfare. The crux of the matter was the rapid and shocking collapse of AQI's position in Ramadi during the last months of 2006. At the start of the year, traditional power brokers had been driven out of Ramadi and Al-Qaeda proxies controlled the city. From May 2006 onwards, a newly-arrived US brigade struck up a strong alliance with Sheikh Abdul Sattar al-Rishawi (Abu Risha) in Ramadi. The joint venture quickly bore fruit, as Najm Abed al-Jabouri and Sterling Jensen stated:

In July 2006, the US Army brigade in Ramadi seemed serious about police recruitment, saying the Iraqi police (IP) could work in their areas of residence to ensure the safety of their families. The Anbar Revolutionaries and other vigilantes answered the call and joined the Ramadi IP. They did this to make their fight against al Qaeda official, to get paid by the Ministry of the Interior, and to avoid targeting by the Americans. In August 2006, when Sheikh Abdul Sattar was building police stations in his tribal areas outside of Ramadi, the stigma of working with the Americans was lessened.⁴⁰

On September 9, 2006, twenty-five Ramadi tribes joined the Anbar Awakening (also known as the Ansar Salvation Council) and formally sided with the US military and the Iraqi government against AQI. Between September and December, these tribes fed some of their manpower directly into the police service and were permitted to stand up other formations of police auxiliaries – the Emergency Response Units (ERU) – to hunt down AQI in operations carried out independently of the police or the US forces.⁴¹

US and Iraqi forces cleared Ramadi of AQI militants. In October 2006, AQI was still confident enough to hold public rallies in Ramadi city and overrun police stations. In November, US and Iraqi forces defeated AQI in a major stand-up battle in eastern Ramadi city (Sofia district). In November, December and January, around seven hundred to a thousand recruits joined the security forces in Ramadi each month. Between mid-November and mid-January, US forces established a major reconstruction program that employed local sheikhs as subcontractors.⁴²

⁴⁰ Najm Abed Al-Jabouri and Sterling Jensen, "The Iraqi and AQI Roles in the Sunni Awakening," *Prism*, Volume 2, No. 1 (December 2010), available at <http://www.ndu.edu/press/iraqi-aqi-roles.html>.

⁴¹ The ERU units were approved by Prime Minister Nouri al-Maliki, paid wages by the US military and received weapons and ammunition from the Iraqi Ministry of Defense.

⁴² Michael Knights, telephone interview with Sterling Jensen, translator to Sheikh Abdul Sattar al-Rishawi, September 15, 2011.

Caches discovered in Ramadi through tip-offs from the public increased from an average of twenty a month in 2006 to an average of ninety a month in the first half of 2007. As Figures 9 and 10 show, the growth in security forces was mirrored by a decline in enemy activity. US forces activated numerous Iraqi Police stations and instituted a census and ID card system to register Ramadi residents. On March 13, 2007, Prime Minister Nouri al-Maliki made his first visit to Anbar, travelling to Ramadi to meet with Anbar Awakening leaders. After a final desperate surge of ten car bombings (including one chlorine attack) in February, AQI collapsed in Ramadi city during March 2007. From April 2007 onwards, AQI activity in Ramadi dropped off almost completely.⁴³

The action then shifted to Fallujah, outlying areas north of Ramadi and the western Baghdad suburbs like Abu Ghraib as the Awakening dynamic was replicated in these areas. The new commander of Multinational Forces Iraq, General David Petraeus, gave the 1st Marine Expeditionary Force commander, Major General John Allen, new direction to engage the local powerbrokers in Fallujah. Al-Qaeda in Iraq's October 2006 announcement of the Islamic State of Iraq had pushed many of the insurgent groups between Fallujah and Abu Ghraib into open conflict with AQI by February 2007. Groups such as the Islamic Army of Iraq, Jaish Muhammad and the 1920 Revolution Brigades were linked into local tribal structures.⁴⁴ From March to June, AQI ramped up the number of car bombs it deployed against population targets in Fallujah district, seeking to intimidate tribal leaders and populations. Whereas previously the group had used one or two car bombs per month in Fallujah district center and none in the tribal hinterlands around the city, AQI used five car bombs in March, eight in April, seven in May and five in June. Of the three attacks deep within the tribal areas, all three attacks were chlorine devices.⁴⁵ The deployment of the five-ton chlorine device and the double chlorine attack on Fallujah government center, both in late March, marked the high point of AQI's last-gasp intimidation campaign.

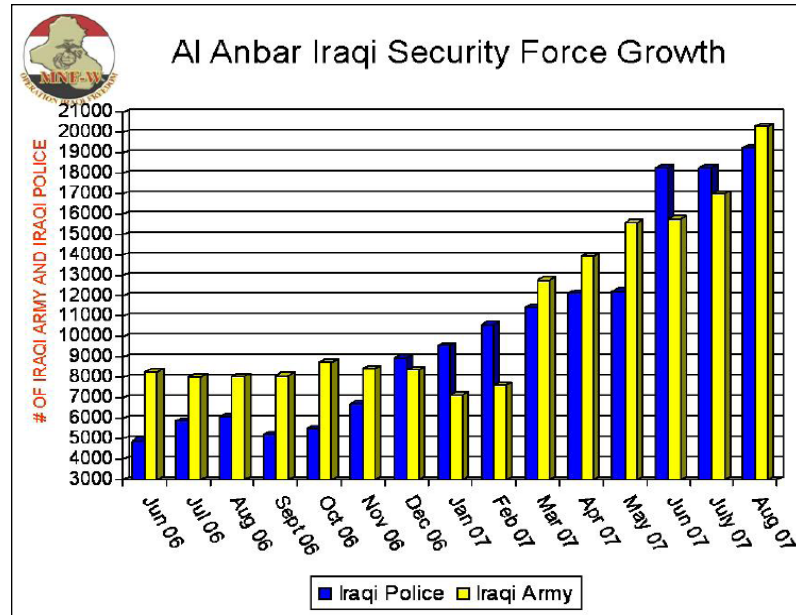


Figure 9: Growth in Anbar security forces.

⁴³ Ibid. Also see Michael Knights, telephone interview with Nibras Kazimi, September 14, 2011.

⁴⁴ Michael Knights, telephone interview with Sterling Jensen, translator to Sheikh Abdul Sattar al-Rishawi, September 15, 2011.

⁴⁵ All data derived from the Olive Iraq dataset.

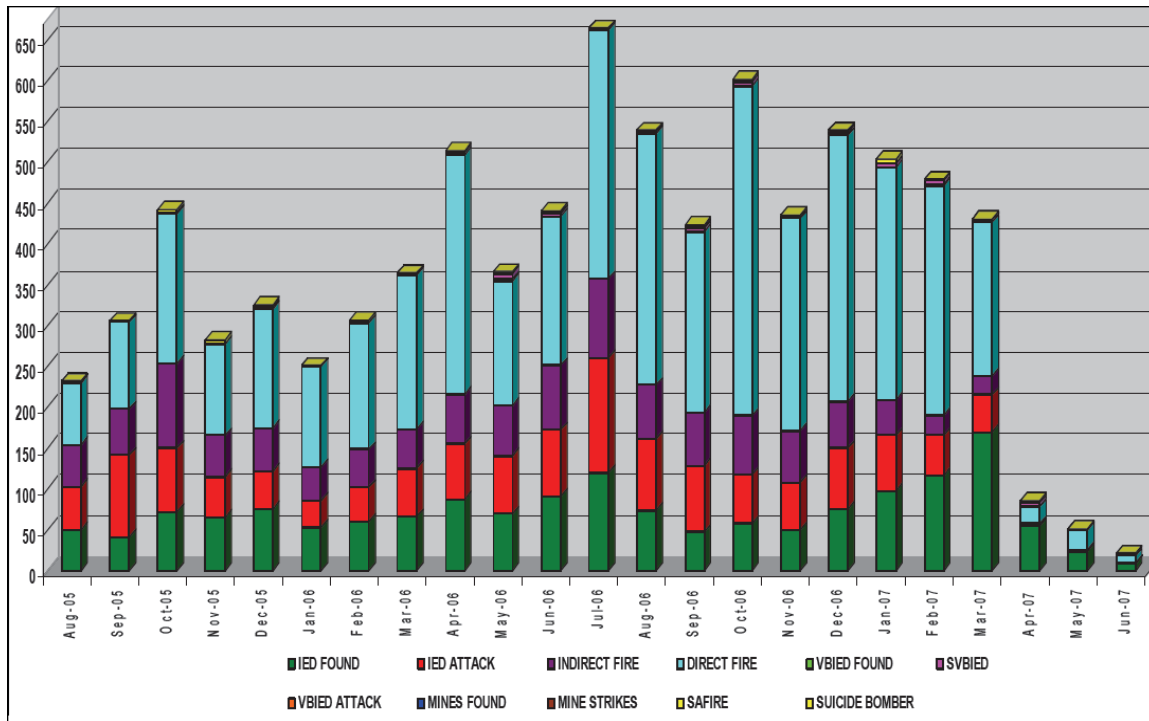


Figure 10: Ramadi monthly attack levels, August 2005 to June 2007.

The fine-grain detail of the targeting of conventional VBIEDs, chlorine car bombs and other attacks suggests a strong connection between the pressure felt by AQI and its decision to innovate with chemical weapons. The October 21, 2006 chlorine attack – though we know little about it – does track closely with the point at which AQI began to feel real sustained pressure in Ramadi. The January 28, 2007 chlorine attack – the first really clear-cut chemical weapon attack on Iraqis carried out by the insurgency – was aimed squarely at the new ERU units being raised by the Anbar Awakening in Ramadi. The triple chlorine bombing in March 16, 2007 was intended to carry a message to the sheikhs leading the Anbar Awakening by targeting their home areas just three days after they met with Prime Minister Maliki. In late March, AQI made a determined attack on the Fallujah government center immediately after the council was reappointed with anti-AQI tribal leaders.

Chlorine attacks were probably utilized by AQI because the movement was desperate to overawe and terrorize the tribal leaders and nationalist insurgents who had turned against it. AQI leaders in eastern Anbar considered such turncoats to be traitors and apostates, and thus viable targets for any form of weapon. If car bombings and assassinations were message sending, the chlorine attacks were a way of turning up the volume and regaining some of the shock effect that might break the will of the Awakening sheikhs.

Why did the chlorine attacks cease?

One contributing reason for the tailing-off of attacks is that the attacks were decimated in eastern Anbar. The fight was lost and many AQI elements abandoned the Ramadi and Fallujah operating areas. Another factor may have been improved control of chlorine canisters.⁴⁶ Yet the

⁴⁶ The US military and Iraq's Facilities Protection Service sought to tighten security at chlorine plants in the spring and summer of 2007. There was also a push to gather as many canisters as possible to a small number of central Baghdad

chlorine tactic did not resurface in other areas of Iraq, no matter how desperate AQI cells became. In the end, the attacks in Diyala were the only real horizontal proliferation of the chlorine bomb tactic from one area to another, and the tactic was not used for long. In one of the two Diyala attacks a US military target was hit in a “clean” attack that did not endanger civilians. The other was a sectarian strike on Shia civilians specifically, underlining the way that chlorine attacks were employed in different ways to fit the local operational aspirations of cells. Between July 2007 and October 2008, three more weapons caches were found containing chlorine tanks in Diyala, Babil and Hawijah (near Kirkuk). Despite hundreds of car bombings since July 2007, only one other chlorine bombing has been recorded since (a foiled attack in Husaybah, on the Syrian-Iraqi border, on 22 November 2009).⁴⁷ As availability of chlorine tanks was not the restraining factor, chlorine attacks must have either been considered too ineffective or too controversial (or both) to employ more widely.

Perceived ineffectiveness of the tactic

Was the apparent ineffectiveness or counter-productiveness of the chlorine attacks the decisive factor? By the time chlorine bombs were used, the tide had already decisively turned against AQI. As an innovation, they came too late to reverse the situation in eastern Anbar. Furthermore, the attacks were correctly interpreted by anti-AQI sheikhs as a sign of AQI’s desperation and were even disavowed by the national leadership of the Islamic State of Iraq. The attacks were horrific enough to enrage their intended targets but were not effective enough to truly intimidate them. As Sheikh Aifan Sadun al-Issawi, the target of one of the three March 16, 2007 chlorine bombs told interviewers, “Al-Qaeda sent a tanker of chlorine against me. They blew it up in the first checkpoint, which is very close to my house. My mother was killed — her name was Turkiyah — and five children were killed, and one of my guards. This gave me another great push to fight them.”⁴⁸

Was this dynamic obvious to AQI? Probably not straight away: the effectiveness of the attacks (i.e., their intimidation effect) would not have been entirely apparent to AQI as they undertook the campaign and would have been given time to work. In February and March 2007, AQI enthusiastically embraced chlorine attacks in eastern Anbar, with these attacks comprising over half of the VBIED attacks in Ramadi and Fallujah districts in these months. There was no cessation or reduction of attacks after the Islamic State of Iraq publicly disavowed the tactic on March 22, 2007. In contrast, more chlorine attacks might have been launched during this period if it were not for the major arms caches and car bomb-making workshops disrupted in late February and March. The tailing off of attacks only occurred from the end of March, though deliberate chlorine attacks continued into late June at least.

Targeting concerns and broader strategy

It is possible that the lack of support from other parts of AQI / ISI were a factor in limiting that spread of chlorine bomb tactics. In other cases, AQI / ISI proved to be gimmicky about new tactics, promoting their adoption by different cells operating across the country. One example would

water treatment plants as a part of emergency program of providing clean water to Baghdad during the summer. Michael Knights, interview with Joel Rayburn, October 25, 2011, Washington DC.

⁴⁷ “Police find 2 chlorine caches in Kirkuk,” *Voices of Iraq*, October 10, 2008, available at http://www.iraqupdates.com/p_articles.php/article/37757.

⁴⁸ Interview with Sheikh Aifan Sadun al-Issawi, Fallujah Representative Iraqi Awakening Political Party, in Gary W. Montgomery and Timothy S. McWilliams (eds), *Al-Anbar Awakening, Volume II: Iraqi Perspectives from Insurgency to Counterinsurgency in Iraq, 2004–2009* (Quantico, VA: Marine Corps University Press, 2009).

be the promotion of RKG-3 anti-tank grenades in May 2007, which AQI / ISI glamorized through their propaganda about the so-called “Thermal Brigades” of Al-Qaeda in Iraq.⁴⁹ This did not happen with the chlorine-laced car bombs.

Instead AQI chose not to promote such attacks and they were not emulated in almost any other parts of Iraq. As noted, the Islamic State of Iraq (ISI) did not claim the chlorine attacks using their traditional means of communication such as the Al-Sahab Institute for Media Production, the Global Islamic Media Front (GIMF), the Al-Fajr Media Center, the Al-Borag Media Center, or the Al-Furqan Institute for Media Production. The only ISI communication on the chlorine attacks was the March 22, 2007 communiqué that denied targeting “the general people with poison gas.”⁵⁰

This formulation is probably significant: it is the *target* of the attack that is proscribed, not the weapon itself. AQI does not seem to have been opposed to chemical warfare in principle: quite the opposite. On September 28, 2006, Abu Ayyub al-Masri (also known as Abu Hamza al-Muhajir), the emir of ISI, recorded an audio message that called for persons with expertise in chemistry to help with the development of non-conventional weapons for employment in Iraq.⁵¹ Likewise even after the chlorine attacks, ISI claimed to possess long-range missiles capable of striking Tel Aviv with chemical warheads.⁵² By the middle of 2007, ISI/AQI was engaged in a desperate effort to portray itself as an Iraqi-led organization that stood *with* the people against the occupation. Use of chemical weapons against Iraqi civilians ran counter to this message and the propaganda core of the movement chose not to back the tactic’s adoption by local cells.

Lessons learned regarding innovation by terrorist groups

AQI’s adoption of chlorine-based chemical weapons is an interesting phenomenon but is nonetheless just a single case study. As the historical circumstances of each terrorist group are unique, it is very hard to justify the extraction of transferable conclusions from a single case. Nevertheless, it is only by creating in-depth accounts of individual cases that the academic community can create well-constructed building blocks to use in comparative case study-based analyses. Hopefully this work is useful for this reason alone.

The chlorine bombs case study suggests a number of avenues of enquiry and generates observations that might be further investigated in other cases and through comparative case study methodology. In brief:

- **Internal causes / drivers can be *necessary but not sufficient* to prompt innovation.** There were plenty of internal drivers that might have resulted in AQI adopting chlorine attacks at any stage since 2003, or continuing such attacks to this very day. These factors were all vital – and they each prompted many preparatory behaviors that might have given indicators and warnings of the chlorine attacks. However it took an external factor – the

⁴⁹ Jane's Terrorism and Security Monitor, “Iraq’s RKG armour threat,” May 22, 2009, available at <http://articles.janes.com/articles/Janes-Terrorism-And-Security-Monitor-2009/Iraq-s-RKG-armour-threat.html>.

⁵⁰ “Islamic State of Iraq Issues Statement Regarding Chlorine Attacks, Operations in Amiriyyat al-Fallujah,” SITE Intelligence Group, March 22, 2007, available at <http://siteinstitute.wsonline.com/bin/articles.cgi?ID=publications264807&Category=publications&Subcategory=0>.

⁵¹ Sammy Salama and Gina Cabrera-Farraj, “New leader of al-Qaeda in Iraq calls for use of unconventional weapons against U.S. forces: Possible poisoning of Iraqi security forces at central Iraq base,” *WMD Insights*, No. 10, November 2006, pp. 2-3.

⁵² CBS News, “Islamic State Of Iraq Claims It Has Chemical Warhead Missiles Capable Of Reaching Israel,” September 22, 2008, available at http://www.cbsnews.com/8301-502684_162-4468382-502684.html.

desperation of the movement in eastern Anbar in late 2006 and early 2007 – to push AQI into local adoption of chemical warfare.

- **Intent may be as important as capability.** In a world full of off-the-shelf chemicals, assessing the intent of a group to use chemical warfare may be as significant as assessing the capability to field such weapons. This is particularly true in post-conflict environments where chemical weapons or hazardous materials are not strictly controlled. Considering the operational space available to AQI between 2003 and 2008, or even now, the movement could have mounted chemical weapon attacks every month for years on end had it wished to do so. The group had the basic capability to mount chlorine bombings – or better yet cause major chlorine leaks – throughout the post-2003 era. For some types of attack – killing masses of Shiite civilians or fomenting sectarian civil war – chemical attacks might have been operationally ideal. Yet the movement chose not to mount such attacks, or at least did not consider making such attacks, most of the time. Instead, chlorine bombings were only adopted when AQI's *intent* changed. Further in-depth study should be undertaken, preferably involving interviews with detainees or former militants and ideologues, to ascertain whether AQI had an operational or ethical bias against using chemical weapons, and what the basis of these views were.
- **Desperation can be a key driver of innovation.** In the case of AQI's adoption of chlorine bombs, the primary driver appears to have been desperation as the organization fought to survive in eastern Anbar. In particular, AQI needed to quickly regain the aura of intimidation it had maintained in eastern Anbar for years. It also sought urgently – and probably angrily – to punish the perceived betrayal by the Sunni sheikhs who had fought alongside AQI or passively supported the movement for years. Quite literally, desperate times called for desperate measures.
- **Local context can sometimes be more significant than national or international drivers.** The decision to utilize chlorine bombs very likely originated in eastern Anbar. The national leadership of ISI / AQI was, at the time, focused on the national project of an inter-Salafist umbrella movement, the Islamic State of Iraq, and was not significantly involved in tactical or operational planning at the level of the regional and sub-region “emirates.”⁵³ The political context in eastern Anbar in late 2006 is probably the most significant factor in AQI's localized adoption of chlorine bombings. No amount of studying ISI's strategic communiqués would have detected indicators of the coming adoption of chlorine bombs: the indicators were instead present in district-level politics.
- **Organizations are idiosyncratic and can be conservative in their adoption of new technologies and processes.** The dispersal of chlorine gas by explosive detonation was not the optimal means of causing a toxic-by-inhalation hazard. Indeed, the optimal means of dispersing chlorine gas might have actually been simpler to engineer than the bombings that were undertaken. Chlorine was integrated into the existing preferred “heavy weaponry” of AQI – the suicide car bomb – with little or no amendment of the basic tactics. The explosive force of the car bomb or truck bomb package was the focus of each operation and the chlorine seemed to have been of strictly secondary importance: in almost every case, the explosive yield of the car bomb was large enough to dwarf any casualties that might have been caused by the chlorine payload. This tentative incorporation of chlorine into car

⁵³ Michael Knights, telephone interview with Nibras Kazimi, September 14, 2011.

bombing techniques is suggestive of only limited organizational acceptance of the utility of chlorine attacks or limited flexibility in how attacks were resourced and mounted.

Annex 1: Data on chlorine car bombs, 2006-2007.

Date / time	Location / grid	Intended target	Device	Notes
21 Oct 2006 Time unknown	Ramadi No grid	Unknown, possibly a police compound or sheikh's house.	Car bomb. Main charge = 12x 120mm mortar rounds Chemicals = 2x 150lb chlorine tanks	Intercepted at checkpoint. Caused 3x wounded (two police, one civilian)
28 Jan 2007 0944hrs	Jazeera area, Ramadi (north of Hwy 11) 38S LC396035	Emergency Response Unit (ERU) compound, parade by new volunteers.	Suicide-initiated Garbage / dump truck Main charge = 1 ton bulk explosives Chemicals = single 1-ton chlorine tank	Rammed perimeter fence. Sixteen ERU personnel killed by main charge. Fifty-five wounded, including chemical burns and breathing difficulties. Clean up crews wore NBC masks.
19 Feb 2007 0805hrs	Jazeera area, Ramadi (north of Hwy 11) 38S LC421037	Probable police checkpoint – near OP5 (2.7km from previous incident).	Suicide-initiated Small truck Main charge = ½ ton bulk explosives Chemicals = single 1-ton chlorine tank	Intercepted at checkpoint. Killed two policemen and wounded sixteen civilians.
20 Feb 2007 0707hrs	Taji (northern Baghdad suburb) 38S MC306029	Unknown. Detonated at rest stop / restaurant on Expressway 1.	Large tanker truck Main charge = 100lb bulk explosives Chemicals = two 1-ton chlorine tanks	Possible accidental pre-detonation. Killed nine people and caused 148 injuries, mostly breathing distress and skin irritation.
21 Feb 2007 1125hrs	Bayaa district, West Rashid, Baghdad 38S MB395814	Unknown. Detonated at a diesel fuel station.	Small pickup truck (Kia) Main charge = ½ ton bulk explosives Chemicals = multiple 150lb chlorine tanks	Concealed under commercial cargo of liquid detergent. Killed 5-7 civilians and wounded 25.
3 March 2007 Time unknown	Mansour, Baghdad 38S MB405855	Unknown.	Car bomb Main charge = 32x 57mm rockets, 4x anti-tank mines Chemicals = 2x 150lb chlorine tanks.	Device intercepted – circumstances unknown.
16 March 2007 1611hrs	Ramadi 38S MB438015	Tribal leader's home in Ramadi city	Suicide initiated Small pickup truck Main charge = small amount bulk explosives Chemicals = multiple 150lb chlorine tanks	Stopped at US/Iraqi checkpoint, wounded one US soldier and one Iraqi civilian. First of triple attack.
16 March 2007 1836hrs	Amiriyah, near Fallujah 38S MB933718	Tribal leader's home in Amiriyah The target in Amiriyah was a senior member of the Anbar Salvation Council.	Suicide-initiated Garbage / dump truck Main charge = 1 ton bulk explosives Chemicals = two 1-ton chlorine tanks	Intercepted at checkpoint. Killed six security forces and injured 250 persons (mainly breathing difficulties). Second of triple attack.

16 March 2007 1913hrs	Albu Jumayl, near Fallujah 38S MB858341	Tribal leader's home in Albu Jumayl The target in Amiriyah was a senior member of the Anbar Salvation Council.	Suicide-initiated Garbage / dump truck Main charge = ½ ton bulk explosives Chemicals = one 1-ton chlorine tank	Intercepted at checkpoint very close to target building. Injured 150 persons (mainly breathing difficulties). Third of triple attack.
23 March 2007 Time unknown	Jazeera area, Ramadi (north of Hwy 11) 38S LC 402038	Unknown target.	Articulated (Mercedes) truck rig Main charge = two tons of bulk explosives in 55x two- gallon jugs and 2x 55-gallon barrels Chemicals = four 1-ton chlorine tanks	Discovered in raid.
27 March 2007 1801hrs	Jazeera area, Ramadi (north of Hwy 11) 38S LC 394031	Al Jazeera police station.	Initiation method unknown Garbage / dump truck Main charge = one ton of bulk explosives hidden under boxes filled with candy. Chemicals = twelve 150lb chlorine tanks	Found and defused at site of VBIED attack minutes before.
28 March 2007 0633hrs	Fallujah 38S LC865910	Fallujah Government Center Followed one day after the appointment by the Fallujah City Council of a new anti-AQI mayor, Saad Awad Rahid Al-Dulaimi.	Two suicide-initiated devices Both garbage / dump trucks Main charge = each 1 ton bulk explosives Chemicals = unknown	Intercepted during complex attack (small arms fire and mortars) on Fallujah Government Center. Both trucks immobilized by small arms fire and self-detonated. Wounded 57 US troops and 127 Iraqi civilians and troops.
5 April 2007 Time unknown	Fallujah	Unknown housing compound	Articulated truck rig Main charge = unknown, large secondary explosions on gun camera footage. Chemicals = unknown	US Marine F/A-18 destroys "chlorine truck" at compound.
6 April 2007 1102hrs	Tamim estate, Ramadi 38S LB388988	Unknown target in Ramadi city	Suicide initiated Truck Main charge = 1 ton bulk explosives Chemicals = unknown	Intercepted at checkpoint. Killed 27 Iraqis and wounded at least thirty others. Injured civilians reported breathing difficulties.
25 April 2007 1945hrs	Karmah 38S MB033966	Unknown.	Suicide initiated Truck Main charge = ½ ton bulk explosives Chemicals = unknown	Killed one Iraqi soldier and wounded two others. US forces present but not injured.
30 April 2007 0834hrs	Albu Risha lands, west of Ramadi 38S LB205944	Tribal sheikh, meeting at restaurant	Large tanker truck Main charge = 250lb bulk explosives Chemicals = one 1-ton chlorine tank	Detonated in parking area of restaurant. Killed one person and wounded eleven.

15 May 2007 1905hrs	Abu Sayda in Diyala province 38S MC784544	Market in Shiite area	Suicide initiated Truck Main charge = one ton bulk explosives Chemicals = unknown	Killed 32 people and injured fifty.
20 May 2007 0807hrs	Zangora district, west of Ramadi 38S LC287051	Iraqi police checkpoint	Suicide initiated Truck Main charge = one ton bulk explosives Chemicals = unknown	Killed 2 police officers on checkpoint and injured eleven nearby.
3 June 2007 1350hrs	FOB Warhorse, Babubah, Diyala province 38S MC623401	US military base	Suicide initiated Taxi cab Main charge = ½ ton bulk explosives Chemicals = two 1-ton chlorine tanks	Intercepted at outer checkpoint. No explosion-related casualties but 62 US soldiers affected sought treatment for dizziness and nausea.
1 July 2007 1500hrs	Euphrates bridge, west of Ramadi LC379034	Bridge (the last of five suicide VBIED attacks on the bridge in the first half of 2007)	Suicide initiated Truck Main charge = ½ ton bulk explosives Chemicals = unknown, probably multiple 150lb chlorine tanks	Attacker decided not to detonate. Chlorine bomb defused. Other vehicle detonated, destroying two of four lanes of bridge.

Annex 2: Chlorine bombs as a proportion of total VBIEDs in eastern Anbar between January 28, 2007 and July 1, 2007.



Figure 11: All VBIEDs in eastern Anbar in the date range.



Figure 12: Chlorine VBIEDs in eastern Anbar in the date range.

Annex 3: Indicative image of decline in incidents in Ramadi city during 2007 (from Olive datasets).

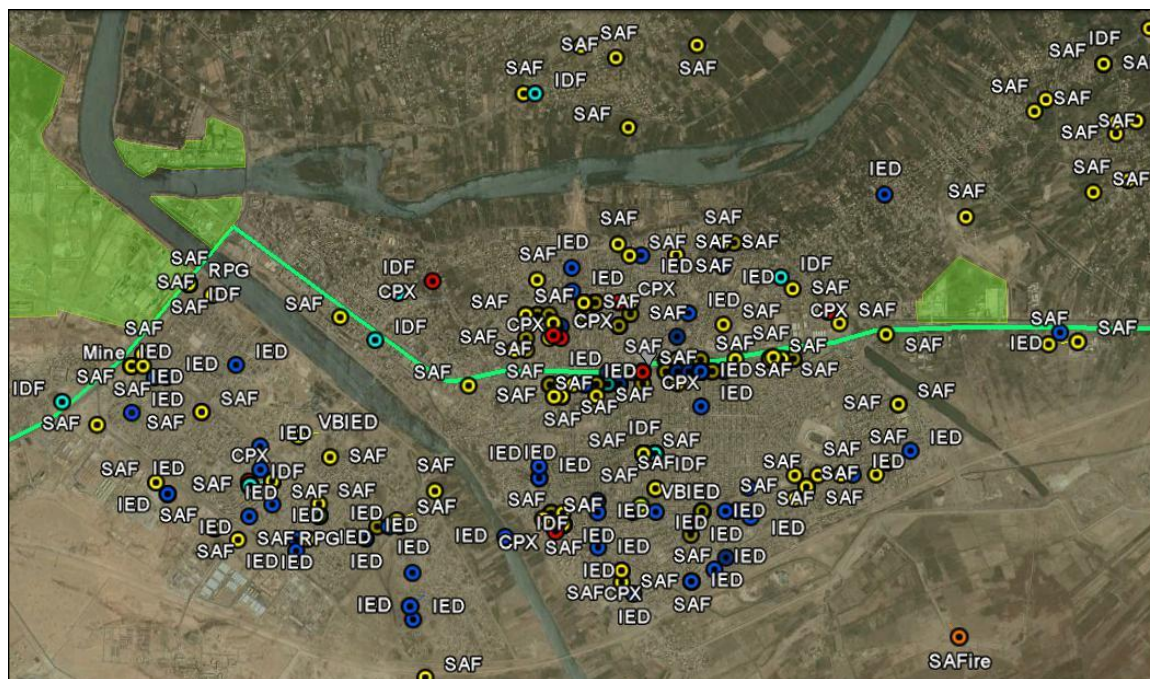


Figure 13: Ramadi city, January 2007.

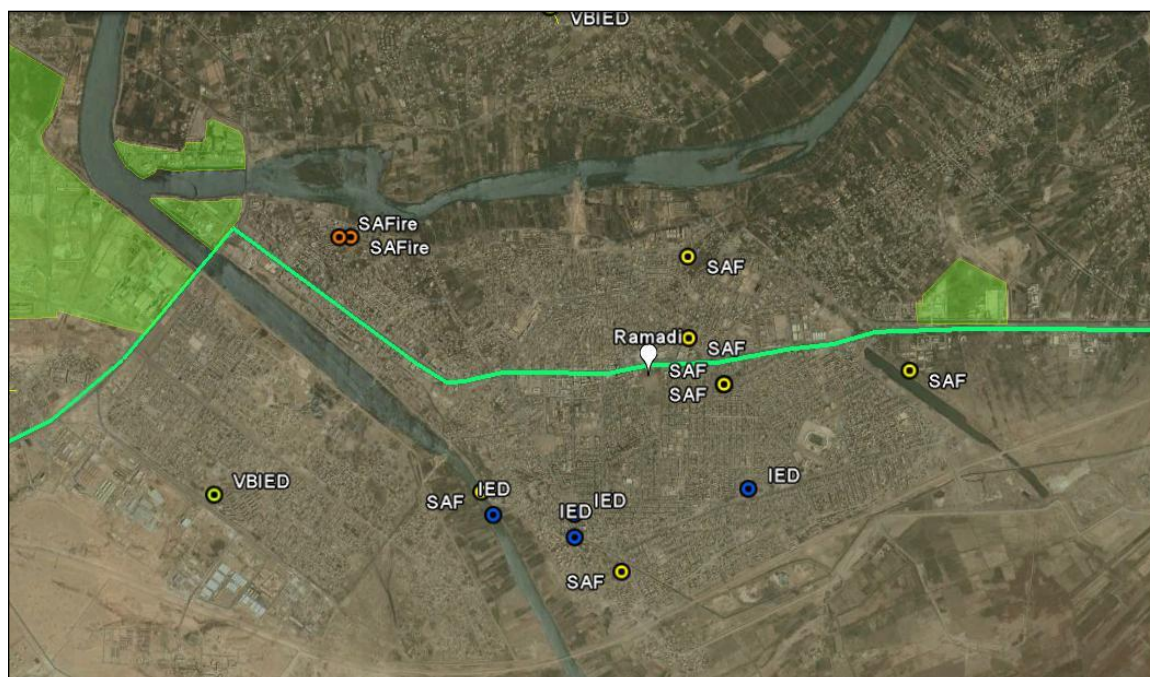


Figure 14: Ramadi city, April 2007.

Annex 4: Indicative image of decline in incidents in Fallujah city during 2007 (from Olive datasets).

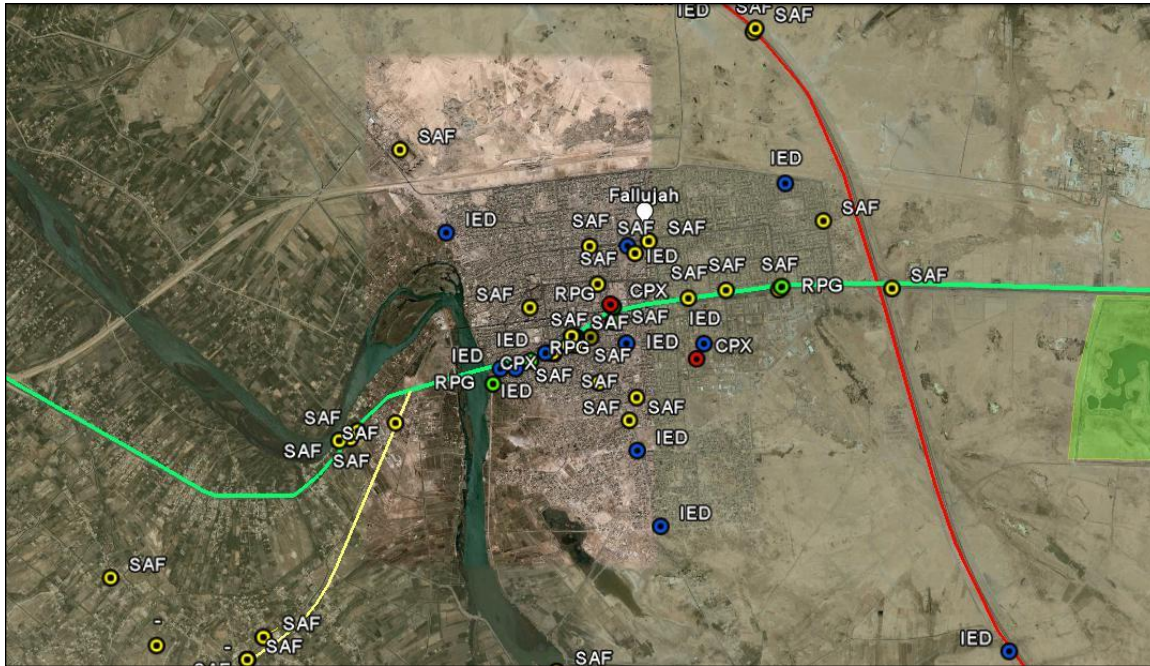


Figure 15: Fallujah city, March 2007. The Awakening movement started later in Ramadi.



Figure 16: Fallujah city, August 2007. By August, AQI had scattered and municipal leadership was back in the hands of the local tribes and families.

APPENDIX V: J. TONGE, THE LACK OF LOYALIST INNOVATION DURING THE NORTHERN IRELAND CONFLICT

Background

Loyalist paramilitaries engaged in “pro-state terrorism” throughout the Northern Ireland conflict, acting, in their view, to preserve Northern Ireland’s place in the United Kingdom and to deter the Catholic community from joining the IRA. Loyalist violence was thus aimed physically at the Catholic-nationalist community and was designed to send messages to the British and Irish governments to demonstrate that a civil war might ensue should a united independent Ireland be forced upon the British population in Northern Ireland.

Loyalist paramilitaries were responsible for 1,028 deaths during the Northern Ireland conflict from 1969 until 2002. The Ulster Volunteer Force (UVF) killed 483 people; the Ulster Freedom Fighters (UFF) killed 265 and a variety of other loyalist groups, such as the Red Hand Commando (RHC) and the Loyalist Volunteer Force (LVF) killed 280.¹ This paper concentrates upon the campaign and lack of innovation of the main two groups: the UVF and UFF. It should be noted at the outset that the UFF was effectively the ‘killing wing’ of the UDA, a flag of convenience used to ensure that the UDA remained a legal organization, until it was finally outlawed in 1992.

The UFF and UVF, under the umbrella of the Combined Loyalist Military Command (CLMC), called ceasefires in October 1994, six weeks after the IRA called its ceasefire and following a spate of loyalist attacks immediately following the republican cessation. The CLMC declared “abject and true remorse” for all victims. The Loyalist ceasefire was often fragile and was opposed by the LVF and by sections of the UFF. In the run-up to the 1998 Good Friday Agreement, the Secretary of State for Northern Ireland, Mo Mowlam, was forced to plead with UFF prisoners that their organization maintain their cessation. Whilst this move was successful, the UFF ceasefire was briefly declared ‘invalid’ by one of Mowlam’s successors, John Reid, in 2001.² An UVF-UFF feud resulted in a series of deaths in the early 2000s, despite their ‘on ceasefire’ status.

Four years after the Provisional IRA completed the decommissioning of its weapons in 2005, the UVF announced that it had “completed the process of rendering ordnance totally and irreversibly beyond use.” At the start of 2010, the UDA also declared that it had begun the process of decommissioning of weapons. Both organizations initially justified not decommissioning by claiming they would not “dance to the IRA’s tune” – an odd claim given that loyalist paramilitaries had long claimed they only existed in response to IRA activity.

Loyalists later claimed that the activities of armed republican dissidents had delayed the decommissioning process. The UVF and UDA ostensibly now exist as commemorative and community organizations. However, there have been difficulties in interesting younger, more militant members in community activity and this, allied to internal power struggles, has led to tension.³ The Independent Monitoring Commission claimed as late as 2009 that loyalist paramilitary organizations continue to recruit on an ad hoc basis.⁴ In 2011, the UVF was accused by the Police

¹ John Coakley, ‘The legacy of political violence in Ireland’, in M. Bric and J. Coakley (eds) (2003) *From Political Violence to Negotiated Settlement: The Winding Path to Peace in Twentieth-Century Ireland*, Dublin: UCD, 192.

² See Peter Taylor, (2001) *Brits: the war against the IRA*, London: Bloomsbury.

³ Lyndsey Harris, ‘*Quis Separabit?* Loyalist Transformation and the Strategic Environment’, in J. McAuley and G. Spencer (eds) (2011) *Ulster Loyalism after the Good Friday Agreement*, Basingstoke: Palgrave Macmillan, 87-103.

⁴ John Grieve ‘Monitoring the Loyalist Paramilitaries: The Role of the Independent Monitoring Commission in the Northern Ireland Peace Process, 2003-09’, in McAuley and Spencer op cit., 176-98.

Service of Northern Ireland of orchestrating attacks upon the Catholic-nationalist enclave of Short Strand in Belfast.

Factors Diminishing the Capacity for Innovation

Structure and lineage

The UVF did not claim to be a new organization, but, somewhat spuriously, claimed lineage from the organization of the same name which pledged to defend Ulster's place in the United Kingdom "by all means necessary" from 1912-14. Indeed the "cult of 1912-14" remained within the Unionist psyche as an example of how armed militancy could be successful.⁵

Unquestionably, the UVF had contributed to the retention of the bulk of Protestant Unionists within the United Kingdom at the time of the partition of Ireland. The UVF reborn in 1966 via the killing of three Catholics bore little resemblance to the mass movement of the early twentieth century, when the Union was under threat. As English notes though of the disorganized 1960s UVF model:

Loyalist fears...during the 1960s were certainly exaggerated: there *was* no IRA uprising in 1966, or, for that matter, in the crucial year of 1969...These three UVF killings, occurring as they did several years before the founding of the Provisionals, clearly show as false any suggestion that it was the Provisional IRA that started the troubles.⁶

Igniting a conflict in response to a non-existent threat of rebellion might indeed be seen as innovative. Moreover, reliance upon dubious antecedents does not preclude innovation; the IRA offered several novel developments in its campaign from 1970, whilst repeatedly claiming to be a direct descendant of the 1916 rebellion against British rule in Ireland. However, the difficulty for the UVF, a small, secretive organization with little public backing, lay in claiming that its rebirth and modus operandi would somehow secure the Union. Few people welcomed its rebirth and, unlike the pre-partition version of the organization, the UVF enjoyed scant legitimacy. Its killing of Catholics seemed unlikely to bolster the Union. The UVF nonetheless developed the capacity to exercise regular sectarian killings. Its closed, hierarchical structure and leadership dominance meant that it had no accountability and the orders of a few ruthless ultras at the organization's head had to be implemented by the few joiners.

In contrast, the UDA's origins lay in an amalgam of local community defense associations. Whilst this was novel and offered scope for local innovation, it created an "amateurish," chaotic federal structure with a lack of central discipline or remit. Moreover, although its membership soared into tens of thousands during the early 1970s, "most were passive supporters rather than active combatants" whose membership soon lapsed amid a lack of commitment.⁷ There was nonetheless scope initially for innovation, given the breadth of the organization and potential infusion of ideas. In an attempt to become the authentic voice of the Protestant working-class, the UDA was instrumental in setting up the Loyalist Association of Workers, a trade union operating on sectarian lines. The UDA also recruited via its youth movement, the Ulster Young Militants, as did the UVF, via the Young Citizen Volunteers.

⁵ Alvin Jackson, 'Modern Unionism and the cult of 1912-14', in M. Bric and J. Coakley (eds) (2003) *From Political Violence to Negotiated Settlement: The Winding Path to Peace in Twentieth-Century Ireland*, Dublin: UCD, 99-114.

⁶ Richard English, (2003) *Armed Struggle: A History of the IRA*, London: Macmillan, 99-100.

⁷ William Beattie Smith (2011) *The British State and the Northern Ireland Crisis 1969-1973: From violence to power-sharing*, Washington DC: United States Institute for Peace, 257.

Differences in formation and organization at times reduced the unity of purpose of loyalist paramilitarism. The UVF's historical approach stressed the defense of the principles of the Ulster Covenant and the defense of the Crown.⁸ The UDA stressed the defense of local communities as its *raison d'être*. Despite these differences, both organizations saw the defeat of the IRA as essential to their roles and engaged in sectarian attacks upon Catholics to deter them from supporting the IRA (even though most Catholics didn't offer such support) – defense as a form of attack – to achieve this. Both loyalist organizations were wary of each other.

Defensive ideology

The prevailing ideology of loyalism was one of defense of the constitutional status quo, a rearguard, defensive stance not attuned to innovative thought. Loyalist paramilitaries existed mainly to emphasize the potential cost to the British government – probable civil war should that government decide to withdraw from Northern Ireland. The British government was not to be trusted according to loyalists, a perception that persisted throughout the Troubles. As late as 1994, in the run-up to the republican and loyalist ceasefires of 1994, the defense of the Union was not seen as something that could be left to Her Majesty's government. The UVF magazine, *Combat*, asserted, "there are those in the British government whom, had it not been for the resilience of the Ulster people would have had our identity engulfed by Eire [the Irish Republic] long before now."⁹

The early years of the conflict saw the UDA and UVF also exercise their militarism in an attempt to preserve Unionist domination in the devolved Northern Ireland parliament at Stormont. The British government amid growing republican insurrection and amid ungovernability in 1972 suspended this parliament. From 1972 until 1998, direct British rule over Northern Ireland was the norm, only once interrupted when the ill-fated Sunningdale power-sharing deal was attempted. Although critical of the middle-class orientation of the Ulster Unionist Party, the dominant force in Unionist politics until 1998, the loyalist paramilitaries did not offer a credible alternative and failed to capture mass Unionist backing. Much harder-line Loyalist sentiment went towards the Democratic Unionist Party (DUP), led by the Reverend Ian Paisley until 2008, which emerged in 1971 as a robust but constitutional loyalist force, much more religiously-influenced than the paramilitaries, further undermining the efforts of paramilitaries to become the "people's army." Although the leader of the DUP had flirted with paramilitarism via the Ulster Protestant Volunteers of the 1960s and again did so in the 1980s with the Ulster Resistance "Third Force," his role was never more than midwife to the armed groups that did emerge.¹⁰

Loyalist paramilitaries were members of that community identified as "Ulster's Uncertain Defenders"¹¹ and "Queen's Rebels."¹² At one level they pledged loyalty to the state, yet such loyalty was conditional upon the particular actions of the government and unconditional fidelity was extended only to the British Monarch. Defensive ideology and insecurity combined to preclude innovative thinking, with disorientation exacerbated when loyalists found themselves imprisoned by the state they purported to serve.

⁸ Lyndsey Harris, 'Duck or rabbit? The value systems of loyalist paramilitaries', in M. Busteed, F. Neal and J. Tonge (eds) (2008) *Irish Protestant Identities*, Manchester: Manchester University Press.

⁹ *Combat*, January 1994: 1; Alan Finlayson, 'Discourse and Contemporary Loyalist Identity', in P. Shirlow and M. McGovern (eds) (1997) *Who are 'The People'? Unionism, Loyalism and Protestantism in Northern Ireland*, London: Pluto, 81.

¹⁰ For an extended discussion, see Ed Moloney (2008) *Paisley: From Demagogue to Democrat*, Dublin: Poolbeg.

¹¹ Sarah Nelson, *Ulster's Uncertain Defenders: Loyalist Political Paramilitary and Community Groups and the Northern Ireland Conflict*, Belfast: Appletree.

¹² David Miller and John Bew, *Queen's Rebels: Ulster Loyalism in Historical Perspective*, Dublin: UCD.

Internal Causes of Loyalist Paramilitaries' Lack of Innovation

Leaks and infiltration

Loyalist paramilitaries were hindered in their freedom to operate through considerable infiltration by the security services, which penetrated the UVF and UFF to the extent that they were able to run a large number of agents in both organizations. Elements within the UVF and UFF colluded with handlers to target republicans (see below). Yet the successful targeting of IRA and Sinn Féin personnel merely boosted the credibility of loyalist terrorists at the expense, amid growing revelations, of the regular pro-state forces. The earlier staging of “supergrass” trials had damaged loyalists. Paramilitaries were prepared to divulge the names of their colleagues in return for immunity from prosecution and, in some cases, payment by the Royal Ulster Constabulary (RUC). In a highly dubious legal process, this led to mass trials and convictions of alleged paramilitaries.

Supergrass trials greatly affected the IRA also during the 1980s, although its pool of active volunteers was larger and those operating mainly from the Irish Republic were largely unaffected. The UVF was particularly badly hit by the evidence provided by Joseph Bennett in his 1983 trial. However, the convictions were overturned at the end of 1984 and loyalist paramilitaries revived, a process abetted by anger over the Anglo-Irish Agreement. The permanent damage done by supergrass trials lay in providing a clearer picture of the hitherto secure (relative to the UDA/UFF) UVF membership in particular. Although apparently discredited, supergrass trials were revived after a twenty-five year hiatus this year when fourteen UVF members faced 97 charges, including that of the murder of a leading member of the UDA, amid testimony from two former UVF members.

UDA versus UVF tensions

Intra-loyalist feuds were common throughout the conflict and erupted during the 2000s, even when the UFF and UVF were on ceasefire. During the conflict, racketeering in particular plagued the UDA, whilst some of its leaders also colluded with the IRA. Jim Craig, a UDA leader during the 1980s, was assassinated for these reasons. The shift of the UDA's role from community defense to control and a more parasitical role partly explained its loss of the membership during the 1970s, although diminished IRA activity was also important. Within the UVF, loyalist colleagues of Lenny Murphy, the leader of the UVF's Shankill Butchers, the most brutal of all the loyalist paramilitary gangs, set him up for IRA assassination because they recognized he was out of control.

The move towards the loyalist ceasefire of the 1990s was challenged internally, “dissidents” emerging within both the UVF and UFF. Within the UVF, Billy Wright led the dissident core into the Loyalist Volunteer Force (LVF). A movement designed to revive sectarian killings rather than offer any innovative military or political thinking, the LVF had sufficient support in its mid-Ulster base to briefly threaten to destabilize the peace process, until Wright was assassinated by the republican Irish National Liberation Army (INLA) in the supposedly secure Maze Prison in 1996.

The UFF divided over the ceasefire between the militarist renegades of “C” Company, led by Johnny Adair, later “exiled” to England, then Scotland, after a killing spree and those supportive of the peace. The Adair section of the UFF took the same skeptical view as the LVF of the ceasefire, arguing that loyalists were winning the war and there was thus no need to stop. Even those ostensibly committed to peace were reactive rather than proactive in respect of the decommissioning process, reluctantly undertaking “acts of completion” for the Independent International Commission on Decommissioning (IICD) after a long hiatus during the 2000s, whilst loyalists

monitored the IRA's progress towards the removal of its guns.¹³ As late as 2009, one UDA leader, Jackie McDonald, was arguing that the weapons held were "the people's guns" and thus could not be removed from the equation, but with pressure upon the UDA mounting, it agreed to decommission weapons.

From different perspectives gleaned from separate studies, Bruce,¹⁴ Harris¹⁵ and Gallagher and Shirlow¹⁶ concur that UDA versus UVF tensions inhibited innovative capacity for loyalist paramilitarism. Bruce depoliticizes the context, arguing that ego and personal desire for control are explanatory variables, with personal aggrandizement displacing loyalist capacity for adaptation. A loyalist paramilitary tendency towards criminality, especially racketeering and drug dealing was also evident, leading to internal conflicts. Gallagher and Shirlow suggest that intra-and inter-loyalist feuding often developed around battles for territorial control. Harris offers the most political explanation, arguing that the lack of loyalist innovation was a derivative of the pantomime horse federal structure of the UDA, which allowed different areas and different leaders to take contrary directions. Whilst this explanation is cogent, the UVF's lack of innovation is less explainable.

Lack of talent, leadership and definition

A further reason for the lack of loyalist innovation has been the inadequacies of leadership and membership. Early leaders of the UDA were seen as gangsters and/or drunks with little talent other than to coerce.¹⁷ "Strategy," especially that for the UDA/UFF, was more likely to be determined in a bar than via a detailed analysis of the political situation. A capacity to engage in random sectarian assassinations of Catholics, regardless of the status of victims or the consequences for the loyalist community, yielded status. Innovation, insofar as it existed, lay merely in the regular capacity to utilize means of escape after killings. Moreover, largely unlike their republican counterparts, drug use and trafficking was common amongst some of the loyalist paramilitary units. One passage from McDonald and Cusack, describing the activities of a highly regarded UDA operator, Stephen "Top Gun" McKeag, illustrates these points:

Every year during the last decade of Northern Ireland's Troubles the Ulster Defense Association held its very own ghoulis version of the Oscars. 'Volunteer of the Year' was an award for top assassins, usually staged in bars and drinking dens in the loyalist stronghold of Belfast's Lower Shankill ... Hundreds of men and women would gather to hear speakers, usually members of the UDA's leadership, announce who had won the year's big award. Inevitably Top Gun's name would be called out over the PA and the crowd, worse for wear from drink and drugs, would cheer wildly...On 28 April 1992, McKeag shot dead Philomena Hanna, a young Catholic shop assistant ... He fired ... as she worked on a window display and when she fell to the ground he fired several more shots into her body. Then he strolled out of the shop and mounted the back of a stolen motorcycle that did a U-turn and sped off towards Lanark Way, the favoured route of loyalist killers returning from West Belfast to the Shankill. Eyewitnesses...reported that as they

¹³ John de Chastelain, 'The Northern Ireland peace process and the impact of decommissioning', in M. Bric and J. Coakley (eds) (2004) *From Political Violence to Negotiated Settlement: The Winding Path to Peace in Twentieth Century Ireland*, Dublin: UCD Press, 154-78.

¹⁴ Steve Bruce, (2004) 'Turf War and Peace: Loyalist paramilitaries since 1994', *Terrorism and Political Violence*, 16.3, 1-21.

¹⁵ Harris, *Quis Separabit*, op cit.

¹⁶ Carolyn Gallagher and Peter Shirlow, 'The geography of loyalist paramilitary feuding in Belfast', *Space and Polity*, 2006, 10.2, 149-69.

¹⁷ Steve Bruce, (1992) *The Red Hand: Protestant Paramilitaries in Northern Ireland*, Oxford: Oxford University Press; Henry McDonald and Jim Cusack, (2004) *UDA: Inside the Heart of Loyalist Terror*, London: Penguin.

left the killers were signing 'Follow the Yellow Brick Road'...assassins regarded Lanark Way and other arterial routes...as their 'yellow brick roads' to safety.¹⁸

Episodically, the sectarian assassinations would be reined in, perhaps most notably during the late 1970s, when Andy Tyrie was the Supreme Commander of the UDA. However, the fall in killings by loyalists (to single figures per year during 1976-8) also owed much to a slackening in IRA activity. The 1970s saw the regular torturing of randomly selected Catholic victims, a feature which distinguished loyalists from the IRA, which tended to torture only those suspected of being informers. As McIntyre argues:

[T]he UDA throughout its history has had the appearance of being an organisation in which muscle rather than strategic acumen was the driving force ... Sammy Smyth was said to be a rarity amongst the UDA leadership in that he had an interest in broader ideological issues. Charles Harding Smith, the organization's first leader, is reported to have said: 'I'm the boss, I take orders from no-one. Jim Craig, a one-time military commander was a brutal boss who imposed discipline through violence ... John Gregg, the would-be assassin of Sinn Féin leader Gerry Adams, was ruthless with his local units and renowned for kneecapping anyone who transgressed him.'¹⁹

The ideological development of loyalism lay largely elsewhere, undertaken by the rural Protestant evangelicalism-meets-urban working-class-insecure-unionism fusion offered by the DUP. Steve Bruce's analysis of loyalism argued that religious evangelicals provided the ideological framework and backbone and that the paramilitaries were mere foot-soldiers of evangelicalism.²⁰ Loyalist paramilitaries mobilized under the "For God and Ulster" slogan of the UVF, but, unlike the evangelical ideologues (and demagogues) that did not do the fighting, the paramilitaries rarely darkened church doorsteps.

Lack of talent thus contributed to lack of innovation within the UDA, but the UVF leadership was, firstly, more constant and secondly generally of higher caliber. The interlocutor between the Irish government and the UVF during the peace process, the Unitarian Minister, Chris Hudson, rejected the idea that such loyalists were Neanderthals and argued that many of the UVF leadership during the peace process began to show sophisticated thinking belying its "comical stereotyping."²¹

Loyalists utilized only one-half of its potential pool of recruits. Within the IRA, women had a significant presence via the activities of Cumann na mBan, but the attempt to replicate this within the UDA was an abject failure. The Women's UDA was disbanded in 1974 after one of its members was murdered by her colleagues and there was virtually no female presence within the UVF.²²

¹⁸ McDonald and Cusack op cit, p.1-2.

¹⁹ Anthony McIntyre, 'Of Myths and Men: Dissent with Republicanism and Loyalism', in A. Edwards and S. Bloomer (eds) (2008) *Transforming the Peace Process in Northern Ireland*, Dublin: Irish Academic Press, 124.

²⁰ Steve Bruce (1994) *The Edge of the Union. The Ulster Loyalist Political Vision*, Oxford: Oxford University Press; Claire Mitchell, 'For God and ... Conflict Transformation? The Churches' Dis/engagement with Contemporary Loyalism', in Edwards and Bloomer op cit., 148-62.

²¹ Christopher Hudson, 'The UVF and the Path to Decommissioning', in James McAuley and Graham Spencer (2011) *Ulster Loyalism after the Good Friday Agreement*, Basingstoke: Palgrave Macmillan, 77.

²² Rosemary Sales, 'Gender and Protestantism', in P. Shirlow and M. McGovern, M. (eds) (1997) *Who are 'The People'? Unionism, Loyalism and Protestantism in Northern Ireland*, London: Pluto, 140-57.

“Community policing”

Much of the authority of the loyalist paramilitary leaders was derived not merely via their supposed capacity to take on the IRA, but also from their overseeing of local policing. There was a policing void in loyalist as well as republican areas. Loyalists had imitated republicans in setting up no-go areas during the early 1970s and continued to unofficially police local areas for decades afterwards. Indeed, given the lack of a definitive republican enemy after 1994, paramilitary punishment attacks in loyalist areas increased (to almost 100 in 2003) as loyalists struggled to maintain control and demonstrate a rationale for their continuing existence. Loyalist paramilitaries engaged in punishment attacks (usually kneecappings) and, in more serious cases, the exiling of individuals, when offenders committed crimes such as theft, joyriding or drug-dealing, the latter only permitted in certain circumstances of profit to paramilitaries. Whilst the number of punishment attacks declined after 2003, the UVF and UDA both continued to assert their right to exercise control in loyalist areas.

Unquestionably some of the demand for community policing came from civil society, although the extent of support for punishment beatings and shootings within loyalist communities is difficult to quantify, as is the effectiveness of such methods. It is stretching a point to claim that demands for community policing placed upon loyalist paramilitaries diminished the capacity to innovate in the war against the IRA, although it further strained resources and time, whilst also providing further security risks in terms of information gleaned by the regular police force. A 1992 Community Relations Council report acknowledged the extent to which paramilitaries were filling the policing void:

The police are not fulfilling their role of crime prevention and are more interested in anti-terrorist work. This has left a vacuum for the paramilitaries. They may be used by people in the community to get things done- for example for house break-ins in which the police have failed to catch the culprits. It was stated that the police have recommended the use of paramilitaries for ‘quick action’ in cases like this.²³

By the late 1990s, Loyalists and Republicans had begun to imitate the innovative republican community restorative justice initiatives. These schemes brought together offenders and victims in an informal setting, excluding the police, and required offenders to engage in good works for the benefit of the community as a form of reparation. The UVF and PUP developed the Alternatives program to deal with young offenders in a non-violent way. It acquired sufficient legitimacy for referrals to be made to the program not merely from the UVF/PUP but also from community groups and social services.

The Failure of Politics

The failure of Loyalist paramilitaries to develop political outlets also ensured the domination of a largely unchanging, non-innovative and sectarian military campaign. The Ulster Democratic Party (UDP) operated as the political wing of the UDA from the 1980s onwards and the Progressive Unionist Party (PUP) operated as the equivalent for the UVF. Yet neither the UDP nor the PUP operated at anywhere close to the level of Sinn Féin as the IRA’s political outlet. Firstly, paramilitary conspiratorialism and disdain for politics ensured that the UVF and UFF remained much more important. The UDP and PUP operated at the level of political consultants rather than

²³ Community Relations Council (1992) *Community Development in Protestant Areas*, Belfast: CRC: 30.

representatives, although this problem was greater amongst the UDP, which was dissolved amid abject electoral and political failure by 2001.²⁴ The leader of the Ulster Political Research Group, which replaced the UDP, later claimed that part of the problem was that the UDA was never really in favor of the Good Friday Agreement.²⁵ In 2002, the UVF openly questioned the political direction of the PUP and the leader of the PUP, Dawn Purvis, quit the organization after the UVF killed Bobby Moffatt in 2010.²⁶ Moffatt's crime was to have antagonized a paramilitary leader.

Secondly, neither of the political wings of loyalist paramilitarism could ever achieve a sizeable foothold amongst the loyalist working-class electorate, reinforcing the perception that politics did not work. Rather than political development and transition to what has been termed new loyalism, loyalist paramilitarism was more successful in developing localized initiatives for former prisoners and local communities, albeit modeled on those begun in republican areas. Groups such as the Ex-Prisoners Interpretive Centre (EPIC) and Local Initiatives for Needy Communities (LINC) emerged to offer voice to local communities struggling to recover from the conflict.

This is not, however, to dismiss the political thinking of loyalism's two small outlets, which did produce innovative ideas (see preparatory behaviors below).

External Causes of Loyalist paramilitaries' Lack of Innovation

The difficulty of defining an enemy

The problem of defining a clear enemy meant that even those commentators with a nuanced understanding of loyalist paramilitaries and who rejected the thesis that they were unreconstructed paramilitaries, acknowledged that loyalist violence was often "nakedly sectarian, targeting ordinary Catholics."²⁷ From the first killings in 1966 until the end of the loyalist campaigns, there was little attempt to refine targeting to ensure that only those active in the IRA or INLA would be assassinated. There were only two major innovations: collusion with elements of the state's security services and, in isolation, attacks upon the Irish Republic (see below). Even under the supposed targeting of the IRA derived from collusion, the majority of loyalist victims remained civilian Catholics.

Of course, prior to collusion (and even during its operation) it was difficult to identify the republican enemy, given the secrecy under which the IRA operated. Nonetheless, there was a regular tendency to assume that the wider nationalist population, the majority of which voted for the constitutional nationalism of the SDLP, (albeit not in the working-class areas targeted by loyalists) sympathized with militant republicanism, a view hardened after the election of the IRA hunger striker, Bobby Sands, in 1981. A UDA leader argued, "The Catholic community as a whole had a major responsibility for the actions of the IRA. The IRA themselves said 'the day the wee woman on the Falls Road comes out and throws the rifle she has been minding on the street we will know we are in trouble'."²⁸

Much loyalist violence was reactive in nature, although disentangling who-provoked-whom in the regular cycle of sectarian killings was often difficult. Moreover, early loyalist bombings, such as that of McGurk's bar in 1971, in which 15 Catholics died, could not simply be seen as reaction, as

²⁴ For a detailed discussion see Ian Wood (2006) *Crimes of Loyalty: A History of the UDA*, Edinburgh: Edinburgh University Press.

²⁵ James McAuley 'Constructing Contemporary Loyalism', in Edwards and Bloomer op cit., 15-27.

²⁶ McAuley (2010) op cit.

²⁷ James McAuley. "Flying the One-Winged Bird". *Ulster Unionism and the Peace Process*, in P. Shirlow and M. McGovern (eds) (1997) *Who are 'The People'? Unionism, Protestantism and Loyalism in Northern Ireland*, London: Pluto, 158-75.

²⁸ Ibid, p.163; *Irish News*, 15 October 1995.

they occurred just before the IRA began to engage in mass slaughter. Loyalist violence also provoked IRA violence in response. Thus the South Armagh Republican Action Force, a thin veneer for the local unit of the IRA, claimed that the January 1976 Kingsmills massacre of ten Protestants (the Catholic passenger was allowed to go free) was in response to the killing of six Catholic civilians the previous evening. In October 1993, the IRA's bombing of a fish shop on the Shankill Road killed nine Protestants, in a failed attempt to kill the loyalist paramilitary leadership, which had met earlier in the flat above. In response, Loyalists killed thirteen Catholics during the following month. The killings included those of six Catholics (and one Protestant) at the Rising Sun bar awaiting a Halloween celebration, when one of the UFF gunmen asked "Trick or Treat?" on entering the premises.²⁹

When, in 1988, John Hume, the leader of the moderate constitutional nationalist party, the SDLP, entered talks with Sinn Féin's President, Gerry Adams, in an attempt to secure peace, loyalist paramilitaries responded by declaring that all members of what was termed the "pan-nationalist" front would be legitimate targets, a move which caused unease within the UDA. Yet the threat made little difference to the existing reality, given that randomly chosen Catholics were by far the most common type of victim of loyalist paramilitaries.

The Inability to attract external support and weapons

With the arguable exception of their working-class heartlands, there were no safe havens from which the loyalist paramilitaries could operate. In the early years of the Troubles, the IRA attracted sufficient sympathy in the Irish Republic for it to operate there without undue interference (this changed rapidly) whilst republicans could count upon an eclectic range of external sources of finance and weaponry, ranging from the Irish-American diaspora to Moammar Gaddafi's regime in Libya.

For loyalists, the range of support and supplies was very restricted, confined mainly to South Africa (weapons) and Scotland (backing). Although there were large number of Ulster-Scots in Canada, the USA, Australia and New Zealand, "what-we-have, we hold" was not an attractive rallying cry for those diaspora and the Northern Ireland situation tended to attract only passing interest from most. The pockets of support that did emerge were closer to home, such as on Merseyside in England and more notably, via the formation of the Scottish UDA. However, the Scottish contingent, often as much, if not more, sectarian in attitude, was largely useless in terms of substantial tangible support, with most of the network arrested and jailed in 1979.

The acquisition of weapons was piecemeal, far from insignificant but bereft of a regular supply. In the early 1970s, the UVF carried out a number of sectarian attacks using a homemade machine gun known as the "Whiteabbey Widowmaker." It is understood that loyalists working in some of the north's major engineering factories made the weapons. Throughout the 1980s the UDA carried out a number of raids on British army bases across the north stealing hundreds of weapons.

Between 1979 and 1986 the UVF received around 100 colt commando rifles, 100 Ingram and MAC-10 sub machine-guns and 100 magnum handguns from loyalist supporters in Canada. The UVF also acquired up to two tons of Powergel plastic explosives, stolen from quarries in Britain over the years. In November 1993 a major UVF arms shipment from Poland was uncovered in Teesport in northern England. The shipment included 320 AK47s with 60,000 rounds of ammunition, 500 hand grenades, 53 pistols with 14,000 rounds of ammunition, two tons of plastic explosives (thought to have been Semtex) and several thousand detonators. The arms shipment had been part of an MI6 sting operation.

²⁹ Richard English (2003) *Armed Struggle: A History of the IRA*, London: Macmillan, 282-3.

Loyalist paramilitaries capitalized on sympathy and assistance from sections of the Ulster Defense Regiment (UDR), the local unit used to support the British Army and Royal Ulster Constabulary. Twelve weapons were stolen from the British Army's Palace barracks in August 1987. UDR soldier Steven Fletcher was later arrested in the Republic and found to be in possession of another handgun stolen from the Palace Barracks armory. Fletcher was jailed for five years in April 1988. During the trial, he claimed he had sold the guns to members of the UDA at a drinking club on the Shankill Road. In 1990 former UDR soldier Samuel McCoubry was jailed for 14 years for operating the largest weapons factory found in Northern Ireland. More than 30 Sten guns and parts for over 1,000 Uzi-type rapid-fire machine guns were found during a search of McCoubry's farm outside Ballynahinch. Up to 800 machineguns were being assembled on McCoubry's premises at the time of his arrest and McCoubry is thought to have manufactured guns for loyalist paramilitaries for nearly 20 years. It later emerged he had been subsidized through finance awarded from the Local Enterprise Development Unit to his saw-making business.

The main cache of imported weapons were Palestine Liberation Organization arms captured by the Israelis, sold to Armscor, the South African state-owned company which, in defiance of the 1977 United Nations arms embargo, set about making South Africa self-sufficient.

Some of these imports were soon rounded up, partly due to the ineptness of the UDA, which weighed down vehicles carrying the guns, resulting in rapid police interceptions. The UVF, better organized, more secretive and with fewer volunteers to service, was more successful in retaining its share of the cargo until a large portion of the cache was recovered in Ligoniel in north Belfast. Some weapons also went to Ulster Resistance, the loyalist "third force," which flirted between constitutionalism and paramilitarism, initially attracting support from the DUP leader Paisley. These weapons were never recovered and the dissident UFF C Company, led by Jonny Adair, later acquired them. The consignment included 200 AK-47 rifles, Uzi machineguns, and machine pistols (also home-made submachine guns); 90 Browning pistols, revolvers, 500 grenades and 200 Czech assault rifles. In addition, 12 RPG-7 rocket launchers and a small amount of Powergel (commercial plastic explosive) and 30,000 rounds of ammunition entered loyalist hands. Storage was a continual problem for loyalist paramilitaries.

External Causes of Innovation

Whilst the vast bulk of their bombings were routine random killings of Catholics in Northern Ireland, Loyalists did innovate significantly in May 1974 in taking the war south. The UVF bombed Dublin and Monaghan, killing 33 (26 in Dublin and 7 in Monaghan) at a time when loyalists and many unionists were attempting to defeat the Sunningdale Agreement, introduced at the start of that year. The Sunningdale Agreement introduced power-sharing between moderate unionists and nationalists in Northern Ireland and established the Council of Ireland, giving the Irish government some say (the extent of which was greatly disputed) in the affairs of Northern Ireland.³⁰

Sunningdale was abandoned at the end of May 1974. Given this, it remains curious that loyalist paramilitaries did not repeat the bombing of the Irish Republic when the equally hated Anglo-Irish Agreement was introduced eleven years later. The scale of loss of life in the Dublin-Monaghan bombings may have embarrassed the UVF, which did not admit responsibility for the bombings until 1993. There have also been persistent, if unproven allegations of collusion between the UVF and elements of the British security services. The type of bombing – car bombings in both locations – was most unusual for loyalists. The 1985 Anglo-Irish Agreement was signed by the

³⁰ Gordon Gillespie (1998) 'The Sunningdale Agreement: Lost Opportunity or an Agreement too far?' *Irish Political Studies*, 13.1, 100-14.

Taoiseach, Garret Fitzgerald and the British Prime Minister, Margaret Thatcher, one year after she and her Cabinet were nearly killed in the IRA's bombing of the Conservative Party conference hotel. The Agreement formalized a consultative role for the Irish Republic on Northern Ireland issues and was opposed with equal, if not greater, fervor, by Unionists, amid the continuation of the Irish Republic's constitutional claim to Northern Ireland. The deal was intergovernmental and impervious to boycott, as there was no attendant power-sharing Assembly in Northern Ireland to derail. A bombing campaign would thus have achieved little, but this is a necessary but insufficient explanation of why loyalists stayed their hand. Aaron Edwards argues that:

[T]he military threat posed to the neighboring state of the Republic of Ireland by loyalist paramilitaries – although limited in comparison to the IRA's bombing campaign in mainland Britain – did none the less provide the necessary impetus for the Irish government to make conciliatory overtures to the Protestant working-class community.³¹

This perception was shared by the UVF and by the go-between for the Irish government and UVF. From the paramilitary point of view, Billy Hutchinson, a former life-sentence UVF prisoner, now leader of the PUP, claimed that the "Irish Government was quite happy for us to be involved [in the peace process dialogue] because what they didn't need was some sort of loyalist activity around the Irish Republic."³² A crucial role for loyalists was to ensure that the Irish Republic abandoned the claim to Northern Ireland in articles two and three of its constitution, something attained in 1998. The paramilitary-Irish government interlocutor, Chris Hudson, was made fully aware that the loyalist threat to the Irish Republic was real:

The Belfast 'face to face' was not a meeting of minds and there were harsh words and some issuing of threats to the people of the South (Irish Republic). In that discussion one of the participants (later given the code name 'Craftsman') even suggested to me that there was no reason why loyalists should not carry out a bombing campaign in Dublin. His contention was that this strategy had delivered for the Provisional IRA in London.³³

That Loyalists stayed their hand after 1974 in terms of the Irish Republic and during the peace process can be partly explained by the difficulty of operating in that jurisdiction, but clearly the mere threat of a renewal of the 1974 violence was felt sufficient to exercise influence. The novelty and surprise of the 1974 operation had an enduring effect upon the outlook of the Irish government, which was conscious not to overplay its hand, notwithstanding the furor over the influence it was afforded in Northern Ireland by Margaret Thatcher's Conservative government during the 1980s.

Collusion and the passing of information from elements of the British security services provided the preparatory ground for the limited amount of loyalist targeting of IRA personnel, as distinct from ordinary Catholics, which occurred, mainly from the mid-1980s until the early 1990s. The extent of collusion was considerable, investigated in a series of inquiries undertaken by John Stevens (later Lord Stevens), who became Commissioner of the Metropolitan Police during his examination of the trading of intelligence material.

³¹ Aaron Edwards, 'Talking to Terrorists: Political Violence and Peace Processes in the Contemporary World', in Edwards and Bloomer op cit., 205.

³² Cited in Graham Spencer, 'From Politics to Community Development: In Discussion with Billy Hutchinson', in J. McAuley and G. Spencer (eds) (2011) *Ulster Loyalism after the Good Friday Agreement*, Basingstoke: Palgrave Macmillan.

³³ Chris Hudson, 'The Ulster Volunteer Force and the Path to Decommissioning', in J. McAuley and G. Spencer, op cit., 75.

The main group colluding with loyalist paramilitaries was the British Army's specialist intelligence unit, the Force Research Unit (FRU) established in 1979. The FRU's modus operandi was to run agents within the UDA/UFF. Brian Nelson, the UFF's Senior Intelligence Officer, was recruited by the FRU 'to encourage the UFF to redirect its "death squads" from innocent Catholics to suspected republican terrorists', a position palpably contrary to normal processes but which the FRU handlers claimed ultimately saved lives.³⁴ The Stevens inquiries into collusion concluded, amongst other findings, that collusion between the FRU and Nelson, as a loyalist paramilitary, contributed to the death of a Catholic solicitor, Patrick Finucane, in 1989 (the UDA used a British army handgun) and similar collusion contributed to the death of a Protestant, Brian Lamb, shot in the mistaken belief that he was a Catholic, as a reprisal for the IRA's killing of twelve Protestants at a Remembrance Day service at Enniskillen in 1987.³⁵

Collusion did not allow loyalists to innovate in terms of the rationale or nature of their killings, but it did ostensibly facilitate "refinement" of their activity. At the same time as collusion was allowing Loyalists to innovate somewhat beyond crude sectarian slaughter towards targeting the enemy, surprisingly innovative political thinking emerged. The political associates of the UDA offered Catholic nationalists power-sharing government and proportionality in political institutions in their *Common Sense* document. Sinn Fein would be allowed to take positions in government amid an IRA ceasefire, a radical offer at the time. *Common Sense* was a new approach to how to end political violence and many of its ideas were adopted in the Good Friday Agreement eleven years later. Loyalist innovatory thinking was based upon an early assessment that the conflict could enter an endgame, amid growing realization of military stalemate. Such innovation was inconsistent; the UDA's alternative was a doomsday plan involving ethnic cleansing and repartition to create an ethnically secure Protestant Northern Ireland.³⁶

Conclusion

Loyalist paramilitaries were less innovative than the IRA in terms of the nature of their violence, which was mainly reactive and sectarian, with the vast bulk of victims being innocent Catholics with no paramilitary connections (approximately 50 per cent of IRA killings were of civilians, compared to over 80 per cent of Loyalist killings). Loyalists were also less ready to use brinkmanship tactics to improve the conditions of prisoners, compared to the no-wash protest and hunger strikes of republicans.

Much of the lack of loyalist innovation is explained by ideology and isolation, the two key variables that did not also pertain to the IRA. Pro-state terrorism has its own heroic narratives, as the UVF's historical connection to 1912-14 tried to emphasize, but its exercise was unlikely to engender much support beyond Northern Ireland. As such, loyalists had few safe havens and struggled to import weapons. Loyalists had to be self-reliant and use their own existing meager resources in contributing to the British government remaining in the region, whilst most loyalists and unionists were content to support the regular state forces of the British Army, RUC and UDR, not irregulars bereft of a mandate or legitimacy.

Thus the containment of the IRA owed far more to the regular security forces, which consistently penetrated the IRA, a task loyalists never attempted. Poor leadership, which was often uneducated and largely unthinking within the paramilitary core, if not beyond, also contributed to the loyalist lack of innovation. Prison was a more debilitating experience for loyalist terrorists,

³⁴ Peter Taylor (2001) *Brits: The War against the IRA*, London: Bloomsbury, 289-93.

³⁵ Stevens Enquiry (2003) *Overview and Recommendations*, London.

³⁶ McDonald and Cusack op cit., 264-6.

imposed by their own state. Loyalist prisoners also emerged from jails to a less supportive community (other than in the most hardline areas). Another key variable was the very different origins and structures of the UVF and UDA, which competed for dominance, whereas the Provisional IRA soon established itself as the main force within republican areas.

Some original political thinking did emerge from associates of loyalist paramilitaries, notably via the UDA/UDP *Common Sense* document of 1987, which advocated power sharing and proportionality in government between Unionists and Nationalists. Moreover, the Loyalist leadership has been sufficiently secure to ward off any grassroots hankering of a return to war, amid the dissident republican activity of recent years. Dialogue with mainstream republicans, similar prisoner experiences and a willingness to consider together issues affecting the Catholic Nationalist and Protestant Unionist working classes have assisted in the transition from violence.

APPENDIX VI: P. WALDMANN, POWERFUL BUT LACKING INNOVATION: THE COLOMBIAN FARC

Introduction

Before we analyze the reasons why the FARC (*Fuerzas Armadas Revolucionarias Colombianas*) have not developed any weapons of mass effect (WMEs), some preliminary notes are necessary. They pertain to a) the counterfactual approach which is needed when dealing with this question; b) the (not unimportant) self-assessment of the FARC as guerrillas, not as terrorists; and c) the fact that there is not much literature regarding the FARC, the oldest insurgent organization in Latin America.

The Counterfactual approach

It is assumed that there are far more factors that have to be considered as possible reasons for an event or a certain development to *not* have taken place, than there are factors that can be involved for a development or event that has taken place.¹ Methodologically, two consequences can be assumed from this: In light of the unlimited number of potentially causal factors it does not seem very sensible to examine specific circumstances and conditions but rather to focus on general structures and processes which have not been favorable to, or have prevented the production of, WMEs. Secondly, in order to narrow down the field of possible causes, it stands to reason that we should look at a comparable case in which WMEs were used. For Colombia that could be the M-19, a guerilla organization founded in 1972, but disbanded after negotiating with the government eighteen years later. The M-19 carried out two high-profile attacks that could be classified as WMEs. The first was the occupation of the embassy of the Dominican Republic in 1980. All ambassadors (including the American Ambassador) who had gathered for a dinner were taken hostage. The hostage drama, which came to a bloodless end only after several days, forced the former government under President Julio César Turbay Ayala (1978-82) to enter negotiations. This decisively undermined the government's claim to a hardline stance against violence. The second high-profile attack occurred five years later. This was the occupation of the Palace of Justice in the center of Bogotá, which ended in bloodshed after the intervention of the armed forces.² Thus a comparative look at the “innovative” M-10 will help to better understand the “conservative” FARC.

How the FARC views itself

Both the US State Department and the European Union (EU) label the FARC as “terrorists.” However, experts dispute this classification. While the FARC have executed and are still executing terrorist attacks in major cities, the goal of spreading fear and terror is being subordinated to considerations of a territorial sort and to strategic planning in terms of space. This involves the FARC's direct or indirect exercise of power over certain areas, the creation of strategic corridors, the surrounding of cities, and movements of retreat or encroachment into certain urban areas. The FARC troops rarely enjoy much popularity with the local population. Instead they are seen as a

¹ One reason for this is that the explanation of an event or development that has actually happened only needs to take into account structures or events that have taken place before, while what has not happened yet theoretically still can happen could be due to a broader set of variables.

² On the history of the M-19 see Villamizar 1995 and Zuluaga 1999.

necessary evil or, in the absence of governmental authority, accepted as the only available regulatory power, albeit one that often uses violent methods. Nevertheless, the majority of Latin American specialists on violence refer to them as “guerillas” and not as terrorists.³

Of course, more important than this “external” definition is the fact that the leaders of the FARC themselves view their organization as a guerilla group which is supposed to form the vanguard of a future revolutionary army of the people and of a mass uprising. As we will see, it is this self-assessment that most significantly shapes the FARC's idea of the nature of the fight they are leading, of its main focus and its possible end.⁴

The absence of a body of literature

While other Latin American guerilla organizations such as the Tupamaros (Uruguay), the Montoneros (Argentina) and the abovementioned M-19 have been analyzed in detail, corresponding works about the oldest guerilla organization on the subcontinent are still to be written.⁵ All we know about the “inner development” of the FARC, and in particular about internal discussions on targeting and innovation, derives from occasional memoranda, decisions of the group's general assemblies or interviews given by the leaders. The discussion and assumptions that follow are for the most part based on the secondary literature. Original sources were only occasionally consulted, because these are largely unavailable to the researcher.

The text is organized as follows: first, there is a short overview of the beginning and the history of the development of the FARC, as well as an outline of some characteristics of the organization. The paper's main section addresses the concerns and questions raised by the workshop organizers. It deals with the absence of prerequisites for innovation within FARC, and the continuing absence of “causes” for WME. Finally, the paper discusses the question: at which point in the development of the FARC as an organization has the use of WMEs been most likely?

A Brief History of the Development and Structure of the FARC

The FARC are among the veterans of guerilla organizations in Latin America. They were founded in the early 1960s after the so-called *Violencia*, the period of civil war in Colombia (1948-58). Following the *Violencia*, the two traditional parties, the Conservatives and the Liberal Party, agreed to form a permanent coalition, the *Frente Nacional* (National Front), in order to avoid a recurrence of the excesses of the civil war period. It is no accident that other guerilla organizations in addition to the FARC emerged in Colombia during the 1960s. The example of the recently successful revolution under Castro in Cuba (1959) set a precedent and inspired a spirit of resistance by the liberal guerillas rebelling against the utterly repressive regime of the Conservatives in Colombia. The guerrillas also felt provoked by the cartel of power formed by the Conservative and Liberal parties, the *Frente Nacional*, which monopolized political power at gunpoint.⁶

In the case of the FARC, the impetus for rebellion originated in rural, peasant self-help communities which, supported by the Communist Party of Colombia (Partido Comunista Colombiano, or PCC), had formed during the turmoil of the *Violencia* period. Two elements, the peasant's shrewdness and tenacity as well as the submission to the dogmatic guidelines for a Marxist revolution provided by Moscow, would shape the political and military course of the FARC for

³ Pizarro 2004, p. 73ff; Rangel 1998, p.6; Zinecker 2007, p. 305ff.

⁴ Compare the interviews with guerilla leaders in Arango 1984, p. 23ff, 84ff.

⁵ According to Fischer 2005, p. 85 n. 23, “A convincing history of the FARC has not been written yet.”

⁶ Palacios 2006, p. 190ff.; Waldmann 2007, p. 225ff.

decades. The concrete cause for the FARC's creation was the government's attempt to end, at gunpoint, the "Independent Communist Republics" left over from the *Violencia* period. The FARC later glorified this incident, known as the Marquetalia episode after an area in the southern part of the Tolima province where these events took place. Thousands of soldiers, highly trained and equipped with the latest weaponry from the U.S., were mobilized to drive 46 peasant families from land that they had occupied. Even though the soldiers successfully recaptured the land the peasants had occupied, the troops were unable to capture the peasants who became a mobile guerilla group and took on the name FARC two years later, in 1966.⁷

The development of the FARC can be roughly divided into three periods: 1966-1982, 1983-2000, and 2000 until today. During the first fifteen years (1966-82) the FARC remained a group of rebels, barely noticed by the Colombian public. The group settled into some remote and rather inaccessible regions in the vast Colombian hinterland and was primarily preoccupied with standing their ground against persecution by the military and police, while they consolidated their own structures. The number of fighters was still relatively small (several hundred) and was only growing slowly. The same could be said of the "fronts" (*frentes*) at which the combatants were dispersed. Their weaponry was insufficient, mostly stemming from raids on police stations and military patrols.⁸

The second phase (1983-2000) was initiated by the so-called VIIth Conference, in which the organization decided to expand. The overall number of combatants was to be increased significantly and the number of regionally dispersed "fronts" to be doubled in order to weaken the Colombian army by forcing it to divide its forces. In addition to the territorial diversification of the troops, the leadership skills of FARC's inner circle were strengthened and new institutions, including a military training academy, were formed. There were international and national determinants of this dynamic. On an international level, the successful Sandinista revolution in Nicaragua (1979) should be mentioned. It reinvigorated the stalled revolutionary movement in Latin America and initiated a second wave of formation of guerilla organizations. Overall these guerrilla groups operated more successfully than the groups of the first wave, and posed a bigger challenge for their respective governments.

The FARC also benefited from the country's economic upturn due to the development of new agricultural products fit for export. A special, intensive symbiosis developed rapidly in the 1980s with the drug industry (in the widest sense). FARC specialized in defending farmers who grew illegal coca plants in the country's southern and southeastern periphery. The farmers paid FARC a kind of tax in return for protection from the governmental security forces as well as from the exploitation by intermediaries and powerful drug bosses. Finally, the rebels stood in good stead because of a perennial armistice for all guerilla groups negotiated with the government under Belisario Betancur (1982-1986). FARC used this pause in the fighting in order to effectually increase their force structure and their material resources, so that they were optimally prepared for the resurgence of fighting which was to be expected after the end of the armistice.⁹

⁷ Pizarro 2004, p. 85ff; Allemann 1974, p. 255ff; Fischer 2005, p. 80ff.

⁸ Pizarro 1992, p. 180ff.; Fischer 2005, p. 85f.

⁹ Pizarro 2004, p. 87ff.

Table 1: Development of the military force of the FARC 1966-2009

Year	1966	1970	1978	1982	1986	1991	1996	1998	2001	2009
Number of Fronts	6	N/A	N/A	15	32	49	66	N/A	70	N/A
Force Structure	350	750	1000	N/A	3500	5600	7500	12000	15000	8000

The numbers are not complete as the information stems from different sources.¹⁰ A good many things suggest that the FARC reached their maximal force level and military strike power (estimated around 18,000 men and up to 90 fronts) around 1997/98 and therefore their peak had already been passed in 2001. Also, it is unclear where the boundary between actual members of the organization (“fighters”) and helpers or supporters is to be drawn, and this affects force structure estimates. Into which category, for example, should the numerous employees in the municipal areas, who provided the organization with information about the banking and insurance sectors, be included? The overall picture presented by the numbers is, nevertheless, conclusive. We can assume that the FARC transformed itself into a powerful economic and military organization within fifteen years. In the late 1990s the income of the FARC, stemming mostly from kidnappings and drug trafficking, was estimated to be around US\$600 million per year.¹¹ This enabled them to buy modern weapons on the international black market, to pay generous bribes to spies and informants – without whose help the large-scale kidnapping business would not have been possible – but also to local civil servants, and to secure an adequate standard of living for the “troops” and their families. Last but not least, the fact that the Colombian army suffered some severe defeats at the hands of the FARC demonstrates how seriously the guerilla organization had to be taken as a powerful military force.¹²

The advance and expansion process of the FARC did not proceed uninterrupted. For instance, the attempt to increase the FARC's power and assertiveness through amalgamation with other guerilla organizations, worked only temporarily. The guerrilla coordination committee that resulted (*Coordinadora Guerrillera Simón Bolívar*) proved a failure and was subsequently disbanded. The formation of a political party by the FARC, the *Unión Patriótica*, with which it wanted to distinguish itself from the Communist Party, proved to be a failure as well. Though the party candidates were successful in a number of elections, in the aftermath rightwing extremist death squads killed its followers. After this failure to gain political influence by legal means, the FARC exclusively concentrated on exercising pressure, and the use of violence, in order to come closer to their goal of acquiring power.¹³ They were so successful in this that the guerilla expert Alfredo Rangel predicted a threatening vision for Colombia's future. He suggested that the country might soon be divided by a corridor occupied by the rebels and that the big cities would be surrounded by them. His colleague Eduardo Pizarro added that while one could not speak of a counter state or a “state within the state” yet, the FARC had reached the status of a proto-state, which posed a tremendous challenge for the Colombian government.¹⁴

Soon after, however, the decline of the FARC began. This third phase of its development began under the presidency of Andrés Pastrana (1998-2002), who was, on the one hand, open to serious peace talks with the FARC while making sure, on the other, that he had the growing military

¹⁰ Pizarro 2004, pp. 65, 86, 97; Lair 1999, p. 68ff.; Richani 1997, p.41ff.; Rangel 1998, p. 29.

¹¹ Richani 1997, p. 45ff.; Rangel 1998, ch. 1 and 2.

¹² Rangel 1998, p. 81ff.

¹³ Zinecker 2007, p. 380ff.; Pizarro 2004, p. 92ff.

¹⁴ Rangel 1998, pp. 33, 80; Pizarro 2004, p. 62.

support of the United States. President Alvaro Uribe (2002-2010) continued the equipment and modernization of the army with the help of the United States under the “Plan Colombia” with determination. For a few years he succeeded in pacifying the right-wing extremist militia, which had consolidated under the umbrella organization *Autodefensas Unidas de Colombia* (AUC, the Colombian United Self-Defense Forces), so that he was able to use the army exclusively in fighting the main enemy, the guerillas. For the first time in many years the military kept the upper hand in its armed encounters with the FARC units. Most importantly the government succeeded, in the course of the military offensive, in driving the FARC out of strategically important areas and in breaking up the corridors that had secured the connection between the different “fronts” and blocks of rebels. All this led to a considerable weakening of the FARC, who are said to have lost around 6,000 men through desertions between 2002 and 2007.¹⁵ This weakened position resulted in an increased willingness to enter into negotiations with the government. Furthermore FARC returned to the concept of a mobile guerilla force on which it had based its actions decades earlier, mixed with an increasing number of terrorist attacks in the cities.¹⁶

Not much remains of the original goal of radical, revolutionary change, a goal that had characterized the FARC’s internal discourse for a long time. Since the 1990s, apart from a continuing call for land reform, declarations of a more social democratic nature have predominated. These include the growing support for cooperatives and small-scale entrepreneurs, a stronger protection of national markets and industries, the elimination of corruption, the reorganization of the judicial system, the protection of human rights and the elimination of immunity from prosecution. The disassociation from the official government politics basically amounts to nothing more than asking the state to stand up more for national interests and to a stronger commitment to the needs of the lower class and minority groups.¹⁷ The legitimacy of the democratic form of government, however, is not being questioned; on the contrary, the proposed reforms are supposed to help “true” democracy to assert itself.¹⁸

The FARC is far from democratic. In fact, in the zones in which FARC rules, it practices an authoritarian style of government that amounts to a strict hierarchy: the headquarters, the general staff and the “secretariat” dictate the directives on which the different divisions, the “fronts” and “blocks,” operate. In contrast to most of the other Latin American guerilla groups, the FARC are said to be particularly disciplined, a fact that, together with the long-propagated Marxist ideology, explains the cohesion and strike power of their extensive weaponry. Of course the question remains: As the ideology becomes increasingly diluted and the disruption of the corridors connecting the different “fronts” heightens their inherent tendency to become more independent, can FARC maintain its organizational unity?

This will depend, not least, on the FARC leaders. Apart from the firm organizational structure and a common ideology, the prestige and charisma of some of the leaders, especially of the

¹⁵ *Latin American Regional Report: Andean Group*, April 2007, p. 12. See also Pizarro 2004, p. 316ff.

¹⁶ This can clearly be seen in the monthly reports from Colombia in the magazine *Latin American Regional Report: Andean Group*.

¹⁷ See for example the demands listed in Fischer 2005, p. 92, which the CGSB raised in an open letter to Congress in 1992. Compare these demands to the memorandum sent by the FARC about 18 years later (on February 22, 2010), available at: http://www.resistencia-colombia.org/index.php?option=com_content&view=article&i (accessed July 13, 2011).

¹⁸ See the interview with Manuel Marulanda Velez, alias “Tiro Fijo,” in Arango 1984, p. 110, 112ff. Zinecker 2007, p.344 sees one of the insurgents’ main weaknesses in the fact that they are fighting a democratically elected regime. It is remarkable, however, that following Uribe’s U.S.-centered strategy the guerillas hardly pushed or profited from the argument that the government is handing the country over to the imperialist superpower and that concerted resistance is necessary.

legendary “Tiro Fijo” (Sure Shot) who died a couple of years ago, was the main tie that held the FARC together. Having grown up in a peasant setting, the FARC leadership mirrored the abilities, persistence, shrewdness, tactical sense and long term strategizing of the majority of the members who, in contrast to most other Latin American guerilla groups, also came from the rural lower classes. Even if they can be blamed for having been too closely attached to their rural worldview and to have missed Colombia’s rapid process of urbanization, it has to be acknowledged that the leaders barely revealed their ignorance and made few serious mistakes in the leadership of the rebel organization.¹⁹ Most of them are now dead, many because of targeted actions by the military, which tracked down their hiding places. Only time will tell if the successors to the historic FARC leadership will hold the old “conservative” course or if they will choose new, more spectacular forms and techniques of violence.

The Absence of Preconditions for Innovation

From the author’s point of view, there are five conditions that hinder the FARC’s potential for developing WMEs. Two of these conditions are connected to the country’s political culture, two can be derived from the FARC’s self-conception as a guerilla group and one is a result of the social affiliation of most of its members.

It is known that in many, if not most, Latin American countries the state has not been able to enforce an effective monopoly in exercising legitimate political power. Once again Colombia poses a special case within Latin America, as its political elites, especially the leaders of the two traditional parties, have never seriously tried to limit the exercise of political power to the organs of the state. Rather, they have regularly asked the citizenry to take sides for one party or the other in their conflicts. This is the background for the countless bloody civil wars of the nineteenth century.²⁰ The idea still exists that it is quite legitimate to take the law into one’s own hands if the judicial organs do not punish the “culprit”, or to take up arms in order to enforce one’s own interests or draw attention to political causes one champions.²¹

This is one side of Colombia’s political culture: power holders, private citizens and political activists do not feel that their actions are or should be restricted by the rule of law, as it is standard practice in Western states. From a humanitarian point of view, this release has led to scandalously violent assaults against individuals and to excesses against groups (massacres in the Colombian hinterland are not uncommon). But there are boundaries to the violence. The public does not tolerate every form and every degree of unauthorized acts. The FARC’s rival guerilla organization, the M-19, felt the full force of this in 1985 when they tried to send the public a signal by occupying the Palace of Justice to force a verdict against the republic’s president, Belisario Betancur (1982-86). The armed forces did not acquiesce in this open provocation of the government, employed tanks against the rebels and destroyed the Palace of Justice thus killing not only the attacking rebels but also many judicial employees and some high court judges. The public made the M-19 responsible for this bloody disaster that cost more than a hundred lives. The guerilla organization suffered a loss of face from which it never recovered. This was one of the reasons for their eventual agreement to the government’s offer of negotiations and amnesty, resulting in them laying down their weapons.²² It could be speculated that had the tragedy of the Palace of Justice ended without bloodshed, M-19’s reputation and stature might have been enhanced in the public eye. Nonetheless this much seems

¹⁹ Waldmann 2007, p. 245ff.

²⁰ Krumwiede 1980, p. 79ff.; Palacios 2006, p. 190ff.

²¹ Waldmann 1997; Waldmann 2007, p. 593ff.

²² Zinecker 2007, p. 846ff.

certain: political rebels are not interested in using WMEs that can be highly destructive because they would exceed an unwritten limit on violence deemed acceptable by the Colombian people.

This again is connected to a second characteristic of the country's political culture: the goal of any politically inspired use of military power is rarely the annihilation of the enemy or a fundamental change of the existing structures; rather the ultimate goal is to negotiate with a view toward a reorganization of conditions. On this point, the protagonists in power and the pundits – in Spanish, “*violéntólogos*,” which means specialists on violence – agree: under no circumstances should one's bridges be burned or the enemy fought until the bitter end. Rather, a door should be left open in order to find a way to come to a peaceful agreement.²³ No Colombian president in the past decades has ruled out from the start the possibility of a compromise with the guerilla groups. This is true even for the outspoken “hawks” irrespective of the menacing rhetoric they used initially.²⁴ The best evidence for the ongoing willingness to end conflicts without victory or defeat is delivered by the country's recent political history itself. A number of amnesty offers to the rebels have been made, some of which have been accepted, others have not: in 1953, a declaration of amnesty at the beginning of the dictatorship of Gustavo Rojas Pinilla; in 1958 another amnesty for all rebels who agreed to hand over their weapons at the beginning of the *Frente Nacional*; in 1984 a general armistice under Belisario Betancur; in 1990/91 the reintegration of the M-19 into the political process under presidents Virgilio Barco and César Gaviria; in 1999/2000 failed negotiations between President Andrés Pastrana and the FARC.

When the ultimate goal of militant or warlike conflict is compromise, a mutually agreed-upon pact, then the use of violence beyond a certain level of intensity is out of the question. The purpose of violence is that of backing up the opponent's claim to power and securing them a starting position as favorable as possible for the negotiations that will take place sooner or later. To completely render the opponent innocuous or to provoke him in such a way that a compromise becomes impossible would meet with massive disapproval from the public, if not an eruption of public outrage. It is obvious that this informal consensus about violence's acceptable ultimate goals greatly reduces the opportunities for the use of WMEs.

Now it is conceivable that the FARC could defy these rules that have arisen out of the country's political culture, as the M-19 has rudimentarily done. However, the M-19 saw itself as a new form of urban guerilla. In contrast, the FARC are, and define themselves as, a rural guerilla group – one could even say that within Latin America they are the prototype of a rural guerilla organization. As such they possess an understanding of time and space that hardly lends itself to the use of WMEs.²⁵

However one assesses the effects of WMEs, their use would result in an intensification and escalation of conflict. The resort to WMEs would elicit a rapid reaction from the opponent and spur on the struggle. Rural guerilla groups, on the other hand, are not in a hurry. Having a lot of time at their disposal is an important resource for them. In their eyes, to not be pressed for time is a strategic advantage over the democratically elected government, which has to present tangible results within a few years if it wants to be re-elected.²⁶ The rebels' confidence that time is working for them is even greater if they are in a long-term process of expansion, growing in numbers and power, as has been true of the FARC for decades. In interviews, leaders of the FARC have repeatedly

²³ Rangel 1998, pp. 11ff., 16; Pizarro 2004, p. 324; see also Gonzales Sanchez 2003, p. 37: “... everything is negotiable, at every point. This mania for pacts pervades all areas of social life” (my translation).

²⁴ On Uribe's readiness to negotiate see Pizarro 2004, pp. 303 and 307; on the rebels' readiness see especially Rangel 1998, pp. 10, 17.

²⁵ See Zinecker 2007, pp. 399, 401ff.

²⁶ Waldmann 2005, p. 139ff.

emphasized the time factor as part of their strategic calculations (“Sooner or later, the time will be ripe for a revolutionary change”). Their philosophy also stands the test in phases of stagnation or of partial regression. Their motto seems to be: As our fight has already lasted more than four decades, with many ups and downs, we will also overcome this setback. Either way, their concept of time leaves little room for WMEs, which represent an escalation of the conflict.²⁷

The fact that the rural guerilla groups have their own concept of space adds to this fact, especially in a country as geographically fragmented, difficult to manage and control as Colombia. The FARC’s operational preconditions and the resulting strategies are the exact opposite of the conditions under which the Tupamaros in Uruguay commenced battle against the government in the 1960s. The small southern republic’s relatively flat topography, the absence of large areas covered by forests, and the dominant role of the capital, Montevideo, forced the Tupamaros to run the risk of becoming urban guerillas and of losing control of the dynamic of escalation. In contrast, Colombia’s much larger size and its regional differentiation virtually have a slowing-down effect.²⁸ The formation of numerous “fronts” by the FARC from the 1980s onward in order to bring about a kind of fragmentation of the armed forces had the downside of also setting free centrifugal tendencies on the side of the rebels. Generally it can be assumed that the scattering and relative isolation of the separate guerilla battalions was all but conducive to “innovation.” That even applies to the FARC’s central command that, installed in the South in a peripheral province (Caqueta), was largely cut off from the flow of traffic and communication that could have triggered the development of WMEs.²⁹

As a last relevant variable, the peasant background of most of the traditional FARC leaders and the guerilla organization’s general embedding in a rural lower class milieu, needs to be reiterated.³⁰ This basis of social recruitment explains some previously mentioned socio-psychological dispositions and characteristics like persistence, consistency in the pursuit of goals, tactical shrewdness and the avoidance of mistakes; discipline and organizational unity. Being particularly innovative, testing new forms and techniques of violence, surely is not among these characteristics. In fact a rather conservative dislike for experiments is typical of the FARC. This clearly contrasts with the actions of the mostly urban guerilla groups of Latin America that primarily consist of students and middle class intellectuals. The M-19, the Tupamaros and the Montoneros have not only been much more impatient and careless than the FARC but also came up with numerous tactical maneuvers and tricks to mislead and fool the security forces and to surprise and entertain their urban audience. The FARC dismissed these small-scale innovations as “useless gimmicks” or, more harshly, as “petit-bourgeois adventurism” (*aventurismo pequeño-burgués*).

Causes of the Lack of Innovation

Three factors can be identified (although there may be more) that have directly hindered the development of WMEs by the FARC: the system of war economy that has developed over the course of decades, the lasting influence of Colombia’s Communist Party over the FARC and the competitive relationship with the M-19.

In Colombia, violence has not only been used for ideological or political purposes, but also for personal reasons and material gain. Estimates suggest that only around 20% of the country’s

²⁷ On the FARC’s rural notion of time as an unlimited resource see Rangel 1998, p. 5ff. This is reflected in Tiro Fijo’s interview with Carlos Arango. See Arango 1984, pp. 98, 99, 123f.

²⁸ On the Tupamaros see Waldmann 2011.

²⁹ Rangel 1998, p. 81; Zinecker 2007, p. 414ff.

³⁰ Allemann 1974, p. 256; Palacios 2006, p. 192.

high murder rate is related to the political conflict; the rest is of a criminal nature ranging from economic reasons to personal revenge.³¹ In the late 1950s and 1960s, the *bandolero* groups' political and economic motives for their acts of violence already merged seamlessly.³² In more recent times, Colombia has produced the "*sicario*," a juvenile assassin who will kill anybody for an appropriate reward.

The use of WMEs has been rendered unattractive, I believe, by the FARC's strong integration into the illegal war economy that has evolved over the last decades, especially the business of kidnapping for profit, and the growth and trafficking of drugs. The FARC's dependence on both of these sources of income is the reason for the group's interest in keeping the status quo, i.e. the continuation of a low intensity war. This prevents any abrupt process of escalation.³³ It has repeatedly been emphasized that the FARC employs a bigger share of its resources to collect money than it does to fight the security forces. Armed clashes primarily take place in the peripheral zones while in economically more profitable areas the FARC bribe civil servants and come to terms with their enemies, for example the AUC, in order to secure a share in the region's economic revenues.³⁴ The kidnapping industry, which has been developed to perfection by the guerilla organizations requires not only tight relations to the urban bank and insurance employees who provide the necessary information to the rebels, but most importantly the recognition that one should not, metaphorically speaking, kill the goose that lays the golden egg. Effectively this discourages the rebels from questioning the existing distribution of income and wealth. A leading FARC expert concludes that given the elaborate system of dues and blackmailing, the group is wary of putting the traditional economy into serious trouble.³⁵ Such principles of consideration and preservation are unlikely to produce an atmosphere of increasing confrontation that would favor the use of WMEs.

The Colombian Communist Party's influence over the FARC leadership over an extended period of time has had a similarly neutralizing effect.³⁶ Even though they have evaded the PCC's interference since the late 1980s, it still has to be assumed that the ideas propagated by the communists loyal to Moscow have continued to have a formative influence on the FARC leadership, especially the idea of a future revolution. According to this idea, the chances of revolution do not depend upon the guerilla's eagerness to fight or their readiness to make sacrifices. At best, these factors are harbingers or vanguards of the revolution. What the organization can do is heighten the general awareness of the injustice and untenable nature of the existing regime through selective attacks. In the end, however, the initiative of the people ("*el pueblo*")—the rank and file—will be crucial. Only if the people revolt and stand up against the oligarchic rule will the moment come to effectively get rid of that rule. This development will have to ripen naturally. Attempts to bring it about "artificially" are regarded as blind activism, doomed to failure.

Needless to say this attitude, which runs contrary to the *foco* theory that prevailed for a long time in Latin America, does not leave much space for the utilization of WMEs. One strong deterrent for the FARC was the example of the M-19. A third assumption behind these considerations is that the behavior of the M-19 doubly blocked the FARC's temptation to resort to WMEs. The role of urban guerilla, with all the possibilities to shock and enthrall the urban audience that go with it, was already taken; moreover the M-19's development impressively demonstrated how poorly the impact of primarily symbolic acts of violence was received. The FARC dismissed the somewhat theatrically

³¹ Pizarro 2004, p. 53.

³² Sanchez/Meertens 1985.

³³ See especially Richani 1998; see also Rangel 1998, p. 94ff.; Fischer 2005, p. 89ff.; Pizarro 2004, p. 91ff.

³⁴ Richani 1997, p. 47ff.

³⁵ Rangel 1998, p. 31.

³⁶ Eduardo Pizarro in particular has emphasized the PCC's sustained influence on the FARC. Pizarro 1992; Pizarro 2004, p. 85ff.

staged attacks of the competing urban guerillas as cheap showmanship and generally made the M-19 out to be a group of “petit-bourgeoisie gone wild.”³⁷ The M-19’s surprising acceptance of an offer of amnesty by president Barco that caused, after a short interlude in the constituent assembly, the group’s speedy disappearance from Colombia’s political and military stage, confirmed as far as FARC were concerned the accuracy of their opinion that the M-19 had been a gang of dubious political adventurers.³⁸

Innovation: If at all, when?

Thus far the question of why the FARC have not developed WMEs has been approached from its structural side. We have analyzed which preconditions have rendered the utilization of these weapons unlikely and which factors have directly blocked it. Considering the FARC’s long history, one could pose the question: At which moment in this history would the use of WMEs have been likely or at least possible? If one does not share Nicholas Taleb’s point of view that important events are generally unforeseeable, it should be possible to discern periods of time in which the use of WMEs was more (or less) likely.³⁹

In the second part of this article three phases in the FARC’s history, which spans several decades, were highlighted. A long initial phase when the group was launched and became consolidated between 1964 and 1982 was followed by a phase of expansion and continued gains in power from 1983 until about 2000; and after that date by a third phase of relative loss in significance which could lead to the organization’s definitive decline. Looking back, it seems unlikely that the FARC thought about WMEs or considered their use during the first phase. After the Marquetalia episode, a number of factors militated against the likelihood of WME use: the transition to mobile guerilla tactics, the operation of single “fronts” in the rough hinterland far from the transport and communication networks of cities and from the modernization processes, the guerilla’s deficient weapons procurement and not least the determining influence of the Communist Party, which at the time promoted “all forms of fighting for the revolution” including legal means.

The question arises if the possibility of resorting to WMEs came up during the VIIth Conference in 1982. It cannot be ruled out as, apparently, the guerilla group had reached a stage where the leadership, dissatisfied with its previous development, discussed how to speed up the revolutionary process and how to gain more power and resonance. However, after having decided to expand and deepen the path to the takeover of power (increasing troop size and the number of “fronts”, territorial expansion, finding additional financial resources, improving weaponry and opening up a legal path with the founding of a political party), there is not much reason to believe that on top of all that the use of WMEs was considered. The path to success, which the FARC planned for themselves with these resolutions, seemed to have rendered the utilization of WMEs redundant, irrespective of the fact that it would have clashed with the organization’s long-term goal of one day sitting at the negotiating table with the government. This has changed in the meantime. The FARC’s growth has slackened since 1998 and has, after 2000, resulted in an indisputable loss of military power and therefore also of its political potential. Underground organizations with strong resources that begin to have serious difficulties are especially dangerous, because they will endeavor to cover up or compensate for the loss of real power through spectacular attacks that rouse the public’s attention. It is no accident that the number of FARC’s terrorist attacks in major cities has

³⁷ See for example the interview with Jacobo Arenas in Arango 1984, pp. 37ff., 45. There and elsewhere the FARC’s idea of revolution is reflected at length.

³⁸ On Barco’s offer of amnesty and peace and on the dissolution of M-19 see Waldmann 2007 (“government reaction”).

³⁹ Taleb 2007.

increased in recent times. Does this mean that a large-scale attack that falls under the category of WME is likely?

I put this question to two colleagues, both experts on the FARC who have been following and studying the group's development in depth over a long period of time. Both do not think it very likely that the FARC will use WMEs because such a move would contradict the premises of its previous strategy. It is more likely that the organization will enter a kind of regression, a return to former methods of flexible guerilla warfare, surrendering dispensable areas that the FARC previously occupied. Does this mean that they will also be ready to forego economically and strategically important bastions? Can some kind of desperate attack be ruled out with which they free themselves from their defensive position and try to regain the initiative? Only time will tell.

References

- Allemann, Fritz René. *Macht und Ohnmacht der Guerilla*. Munich: Piper, 1974.
- Arango, Carlos. *FARC veinte años: De Marquetalia a la Uribe*. Bogotá: Ed. Aurora, 1984.
- Bergquist, Charles, Ricardo Peñaranda, and Gonzalo Sánchez, eds. *Violence in Colombia 1990-2000: Waging War and Negotiating Peace*. Wilmington: SR Books, 2001.
- Fischer, Thomas. "40 Jahre FARC in Kolumbien: Von der bäuerlichen Selbstverteidigung zum Terror." *Sozial.Geschichte* N.F. 20.1 (2005): 77-97.
- Krumwiede, Heinrich-W. *Politik und Kirche im gesellschaftlichen Modernisierungsprozeß: Tradition und Entwicklung in Kolumbien*. Hamburg: Hoffmann und Campe, 1980.
- Lair, Eric. "Reflexiones en torno al conflicto Colombiano." *Análisis Político* 37 (1999): 64-76.
- Palacios, Marco. *Between Legitimacy and Violence: A History of Colombia, 1987-2002*. Durham: Duke University Press, 2006.
- Pizarro Leongómez, Eduardo. "Revolutionary Guerilla Groups in Colombia." *Violence in Colombia: The Contemporary Crisis in Historical Perspective*. Eds. Charles Bergquist, Ricardo Peñaranda, and Gonzalo Sánchez. Wilmington: SR Books, 1992. 169-91.
- Pizarro Leongómez, Eduardo. *Kolumbien: Aktuelle Situation und Zukunftsperspektiven für ein Land im Konflikt*. Analysen und Berichte 4. Rio de Janeiro: Konrad-Adenauer-Stiftung, 2001.
- Pizarro Leongómez, Eduardo. *Una democracia asediada: Balance y perspectivas del conflicto armado en Colombia*. Bogotá: Grupo Editorial Norma, 2004.
- Rangel Suarez, Alfredo. *Colombia: Guerra en el fin de siglo*. Bogotá: TM Editores, 1998.
- Richani, Nazih. "The Political Economy of Violence: The War System in Colombia." *Journal of Interamerican Studies and World Affairs* 39.2 (1997): 37-82.
- Sánchez, Gonzalo, and Donny Meertens. *Bandoleros, gamonales y campesinos: El caso de la Violencia en Colombia*. Bogotá: El Ancora, 1985.
- Sánchez, Gonzalo. *Guerras, Memoria e Historia*. Bogotá: Instituto Colombiano de Antropología e Historia ICANH, 2003.
- Taleb, Nassim Nicholas. *The Black Swan: The Impact of the Highly Improbable*. New York: Random House, 2007.
- Villamizar, Darío. *Aquel 19 sera: Una historia del M-19, de sus hombres y sus gestos*. 2nd ed. Bogotá 1995.
- Waldmann, Peter. "Colombia and FARC: Failed Attempts to Stop Violence and Terrorism in a Weak State." *Democracy and Counterterrorism: Lessons from the Past*. Eds. Robert J. Art and Louise Richardson. Washington, D.C.: USIP, 2007. 221-60.
- Waldmann, Peter. "Cotidianización de la violencia: El ejemplo de Colombia." *Análisis Político* 32 (1997) : 34-50.
- Waldmann, Peter. "Die zeitliche Dimension des Terrorismus." *Determinanten des Terrorismus*. Ed. Peter Waldmann. Weilerswist: Velbrück, 2005. 139-87.
- Waldmann, Peter. "How Terrorism Ceases: The Tupamaros in Uruguay." *Studies in Conflict and Terrorism* 34 (2011): 1-15.
- Waldmann, Peter. "Is There a Culture of Violence in Colombia?" *Terrorism and Political Violence* 19.4 (2007): 593-608.
- Zinecker, Heidrun. *Kolumbien und El Salvador im longitudinalen Vergleich: Ein kritischer Beitrag zur Transitionsforschung*. Baden-Baden: Nomos, 2007.
- Zuluaga Nieto, Jaime. "De guerillas a movimientos políticos." *De las Armas a la Política*. Eds. Ricardo Peñaranda and Javier Guevero. Bogotá: Tercer Mundo, 1999. 1-71.

APPENDIX VII: WORKSHOP PARTICIPANTS

Prof. Zachary Abuza, National War College at the National Defense University in Washington, DC. He is on leave from the Department of Political Science and International Relations at Simmons College, Boston. He received his B.A. from Trinity College (1991), and M.A.L.D. (1994) and Ph.D. (1998) from the Fletcher School of Law and Diplomacy, Tufts University. Professor Abuza specializes in security issues and politics in Southeast Asia. He is the author of *Conspiracy of Silence: The Insurgency in Southern Thailand* (2008), *Political Islam and Violence in Indonesia* (2006), *Militant Islam in Southeast Asia* (2003), and *Renovating Politics in Contemporary Vietnam* (2001). His most recent publication, *The Ongoing Insurgency in Southern Thailand: Trends in Violence, Counterinsurgency Operations, and the Impact of National Politics* was just published by the Institute of National Security Studies.

Dr. Javier Argomaniz, Centre for the Study of Terrorism and Political Violence (CSTPV), University of St. Andrews. Dr. Argomaniz's general interests lie in the application of quantitative methodologies to the study of terrorism, international cooperation in counter-terrorism and the European Union (EU) security policies. In particular, he focuses on the way counter-terrorism has become institutionalized as an area of EU involvement. Dr. Argomaniz completed his PhD in International Relations at the University of Nottingham. He has undertaken research at a variety of national and international projects, including a UK Home Office-funded national evaluation scheme and has published in the areas of European Studies, Criminology and International Security. He has recently published a monograph for Routledge on the coherence of the European response to the threat of transnational terrorism. Currently he co-directs with Orla Lynch an EU-funded project studying Terrorism Victims Associations in the UK and Spain.

Maj. Paul Brister, Air Force Special Tactics Officer (active duty). He recently earned his PhD in Security Studies from the Naval Postgraduate School in Monterey, California, after completing a dissertation entitled "Ku Klux Rising: Towards an Understanding of American Right Wing Terrorist Campaigns." Major Brister is a graduate of the U.S. Air Force Academy and holds a Masters degree in Defense Analysis/Irregular Warfare from the Naval Postgraduate School.

Dr. Adam Dolnik, George C. Marshall European Center for Security Studies. Previously, he was the director of terrorism studies at the Centre for Transnational Crime Prevention at the University of Wollongong in Australia. Dr. Dolnik served as chief trainer at the International Centre for Political Violence and Terrorism Research in Singapore, and as a researcher at the Weapons of Mass Destruction Terrorism Research Project at the Monterey Institute of International Studies in California. His writings include *Understanding Terrorist Innovation: Technologies, Tactics, and Global Trends* (London: Routledge, 2007) and *Negotiating Hostage Crises with the New Terrorists* (Westport CT: Praeger Security International, 2007). He has a forthcoming book on *Conducting Terrorism Field Research: A Guide* (London: Routledge, forthcoming 2012). Dr. Dolnik also serves on the editorial boards of *Terrorism and Political Violence* and *Perspectives on Terrorism*.

Prof. Richard English, Director of the Centre for the Study of Terrorism and Political Violence at the University of St Andrews. Previously at Queen's University in Belfast, Northern Ireland, he is the author of six books, including the award-winning *Armed Struggle: The History of the IRA* (2003) and *Irish Freedom: The History of Nationalism in Ireland* (2006). He is also the co-editor of five books and has published more than forty journal articles and book chapters. He is a frequent media

commentator on terrorism and political violence, and on Irish politics and history, including work for the BBC, ITN, SKY NEWS, NPR, RTE, the *Irish Times*, the *Times Literary Supplement*, *Newsweek* and the *Financial Times*. In 2009 he was elected a Fellow of the British Academy (FBA) and a Member of the Royal Irish Academy (MRIA). His most recent book, *Terrorism: How to Respond*, was published in 2009 by Oxford University Press.

Dr. Mohammed Hafez, Associate Professor of National Security Affairs at the Naval Postgraduate School. He specializes in Islamic social movements, Middle Eastern and North African politics, and violent radicalization. He is the author of *Suicide Bombers in Iraq: The Strategy and Ideology of Martyrdom* (United States Institute of Peace, 2007); *Manufacturing Human Bombs: The Making of Palestinian Suicide Bombers* (United States Institute of Peace, 2006); and *Why Muslims Rebel: Repression and Resistance in the Islamic World* (Lynne Rienner, 2003). Dr. Hafez earned a Ph.D. in international relations from the London School of Economics (LSE) and is the recipient of major research grants from the Defense Threat Reduction Agency (DTRA), United States Institute of Peace (USIP), Harry Frank Guggenheim Foundation, United States Information Agency (USIA), and Department of Homeland Security's START Consortium. He has made several appearances on the Jim Lehrer News Hour, C-SPAN, and National Public Radio.

Mr. David Hamon, Principal with Analytic Services, Inc. (ANSER) of Arlington, VA. Currently he is seconded to the Defense Threat Reduction Agency (DTRA) within the U.S. Department of Defense (DoD) as Director of the Office of Strategic Research and Dialogues (OSRD). He conceives, manages, and integrates the future oriented research activity focused on Combating Weapons of Mass Destruction/Effect. From 2002-2005, 2007-2010, he served DTRA as the Deputy Director for Research and Studies of the Advanced Systems and Concepts Office (ASCO). Mr. Hamon advises the U.S. Navy on HIV/AIDS in uniformed service populations, has worked with Argonne National Laboratory, and consults for the private sector on international logistics. He is a Contributing Faculty for the U.S. Army Command and General Staff College. He is a board member of an international relief NGO and several local non-profits supporting educational scholarships for high school students in music and history. Mr. Hamon holds a M.A. in International Relations from Northeastern University in Boston, MA, and a B.Ed in Vocational Education/Speech Communication from Colorado State University. He also holds certificates from two UN courses on Civil-Military Coordination.

Mr. Shanaka Jayasekara, Associate Lecturer at the Centre for Policing, Intelligence and Counter Terrorism (PICT) at Macquarie University in Sydney. He served as an advisor to the Sri Lankan government delegation conducting peace negotiations with the Tamil Tigers from 2002-2006. Mr. Jayasekara was a recipient of the British Chevening Scholarship awarded by the British Foreign and Commonwealth Office. He holds a M.Litt in International Security Studies from the University of St. Andrews and has a Bachelor of Commerce from Griffith University, Brisbane. He was awarded the START Fellowship for 2008-2009 by the National Consortium for the Study of Terrorism and Responses to Terrorism, a centre of excellence of the US Department of Homeland Security (DHS) in support of his research on weapons procurement networks of ethno-nationalist armed groups. Mr. Jayasekara is a Co-Editor of the Asian Conflicts Report (ACR) published by the Council for Asian Terrorism Research (CATR).

Mr. Thomas H. Johnson, Research Professor in the National Security Affairs Department at the Naval Postgraduate School as well the Director of the Program for Culture & Conflict Studies (CSS). Under his direction, the CSS program coordinates research activities on Afghanistan and

other countries of South and Central Asia. For two decades, Mr. Johnson has conducted research and written on Afghanistan and South Asia. He is a member of the Afghanistan Editorial Board of the National Security Archive. His publications have appeared in the *American Political Science Review*, *International Security*, *Foreign Policy*, *Military Review*, *Journal of Politics*, *Orbis: A Journal of World Affairs*, *Central Asian Survey*, *China and Eurasian Forum Quarterly*, *Small Wars and Insurgencies*, *Strategic Insights*, *The Brown Journal of World Affairs*, *Strategic Review*, *Politikon: South African Journal of Political Science*, *Journal of Modern African Studies* as well as numerous scholarly edited volumes and texts. His commentaries have appeared in numerous media outlets, including the *Atlantic Monthly*, *Washington Post*, *Wall Street Journal*, *Newsweek*, *Christian Science Monitor*, *Newsday*, *Baltimore Sun*, *Chicago Tribune*, *San Francisco Chronicle*, *the Telegraph* and on PBS Jim Leher NewsHour, CNN's Christiane Amanpour Show, TVO's Agenda, BBC Channel One, NPR All Things Considered, Press TV, CNN Radio, and Voice of America. Mr. Johnson has taught at the University of Southern California and the Foreign Service Institute, and frequently lectures at Service Academies. Before joining the faculty of the Naval Postgraduate School, he served on the faculty of George Mason University.

Dr. Michael Knights, head of the Iraq programme at the Washington Institute for Near East Policy. He received his PhD on Iraqi military history from the Department of War Studies, King's College London. He has published work on Iraqi and Gulf security and politics since 1997, first as a journalist for oil industry and defense publishers, and later as an academic. Dr. Knights has extensive experience in Iraq and Yemen, two areas where he supported the oil industry and government agencies with advice on security and practical community engagement initiatives.

Dr. Peter Lehr, Centre for the Study of Terrorism and Political Violence (CSTPV), School of International Relations, University of St. Andrews. He is also Visiting Lecturer at the South Asia Institute, University of Heidelberg, Germany. Before taking up his current position in September 2007, he researched the nexus between piracy and maritime terrorism as Lloyd's Maritime Intelligence Group Research Fellow, also at the CSTPV, from September 2004 to August 2007. Prior to that, he was Lecturer at the South Asia Institute, University of Heidelberg, from September 1996 to August 2004. Being a regional specialist on the Indian Ocean, he currently specializes on research in the following areas: Maritime Safety and Security in the Indian Ocean/Asia-Pacific (focusing on piracy and maritime terrorism); Political Violence and Terrorism in South and Southeast Asia; and Organized Crime in South and Southeast Asia. He also works on Critical Infrastructure Protection, with a focus on Air- and Seaport Security. He is the editor of *Violence at Sea: Piracy in the Age of Global Terrorism* (Routledge 2007) and co-editor (together with Rupert Herbert-Burns and Sam Bateman) of *Lloyd's MIU Handbook of Maritime Security* (Taylor & Francis 2009). Currently, he is working on a book manuscript on piracy from ancient to modern times, to be published by Yale University Press in Winter 2012/13. He earned his PhD (Dr. rer. pol.) from the University of Heidelberg, Germany.

Prof. Ariel Merari, Department of Psychology, Tel Aviv University (emeritus). He received a B.A. degree in psychology and in economics from the Hebrew University in Jerusalem, and a Ph.D. in psychology from the University of California, Berkeley. From 1989 until his retirement he was the Director of the Political Violence Research Unit at Tel Aviv University. Previously, Professor Merari was a Senior Fellow at the Jaffee Center for Strategic Studies, where he established and directed the Terrorism and Low Intensity Conflict Program. He was a visiting professor at Berkeley and Harvard, and a Senior Fellow at the Kennedy School's International Security Program of the Belfer Center. He has studied political terrorism and other forms of political violence for more than thirty years and has authored, co-authored or edited several books and many articles, monographs and chapters

on these subjects. In addition to his academic work, he established Israel's Hostage Negotiations and Crisis Management Unit and commanded it for more than 20 years. Recently, he has been the Scientific Director of a study of suicide terrorism. In 2010, Oxford University Press published Professor Merari's book, *Driven to Death: Psychological and Social Aspects of Suicide Terrorism*.

Col. Richard Morales, PhD candidate in the Centre for Strategy and Performance at Cambridge University and is attached to the US Defense Attaché Office in London. His experiences as an Army leader in armor, infantry, and cavalry units includes leading a platoon in Desert Storm, commanding a US sector as part of Balkan UN peacekeeping operations, and repeated tours in Iraq where he was decorated for both merit and service and awarded the Purple Heart. Most recently, he commanded a 900-soldier combined arms task force responsible for security, development and governance efforts across one third of Baghdad. Previously, Col. Morales served as a White House Fellow assigned to Office of Management and Budget, National Aeronautics and Space Administration, and the Department of Homeland Security. He holds degrees in engineering, business, and security studies from the US Military Academy, Yale, and the Naval War College.

Dr. Cerwyn Moore, senior lecturer in international relations at the University of Birmingham. His work focuses on post-Soviet security, with a special interest in conflict and terrorism in the North Caucasus. Dr. Moore has published widely on aspects of terrorism, particularly the use of suicide attacks, radical tactics including hostage taking, the role of foreign fighters and the influence of militant Islam in Chechnya. He undertook fieldwork in Russia, including in the North Caucasus in 2004 and 2005. Some of his major work in Chechnya includes a single-authored monograph, *Contemporary Violence: Postmodern War in Kosovo and Chechnya* (2010), as well as articles such as "Foreign Fighters and the case of Chechnya" [with Paul Tumelty], *Studies in Conflict and Terrorism*, and "Assessing Unholy Alliances in Chechnya: From Communism and Nationalism to Islamism and Salafism" [with Paul Tumelty], *The Journal of Communist Studies and Transition Politics*. His forthcoming works include, "Suicide Attacks: Chechnya, The North Caucasus and Martyrdom" and "Mass Hostage-Taking from Budonnovsk to Beslan."

Dr. Maria Rasmussen, Associate Professor in the Department of National Security Affairs at Naval Postgraduate School. She taught at Yale and the University of Vermont, and has lectured at universities and military institutions in a variety of countries. She is the author of *Argentina's Lost Patrol. Armed Struggle, 1969-79*, has recently completed a volume on negotiations with armed oppositions to the state, and is at work on a retrospective look at the Northern Ireland conflict 1969-2007. Rasmussen has led a number of research and NGO teams, and has received funding from the Ford Foundation, Organization of American States, United States Agency for International Development, Olin Foundation, and various organizations within the U.S. Department of Defense.

Prof. Andrew Silke, Chair in Criminology at the University of East London, where he is the Field Leader for Criminology, and the Programme Director for Terrorism Studies. He has over 100 publications on issues to do with terrorism and counter-terrorism. His most recent books are *Terrorism and the Olympics* (co-edited with Anthony Richards and Pete Fussey) and *The Psychology of Counter-Terrorism*. Professor Silke serves on the European Commission's *European Network of Experts on Radicalisation* and formerly on the European Commission's *Expert Group on Violent Radicalisation*. He has provided invited briefings on terrorism-related issues to Select Committees of the UK House of Commons and was appointed in 2009 as a Specialist Advisor to the House of Commons Communities and Local Government Committee for its inquiry into the UK Government's

programme for preventing violent extremism. In 2010 he gave invited oral testimony before the Canadian Special Senate Committee on Anti-terrorism.

Dr. Chris Smith, Associate Fellow with the Asia Programme at Chatham House. He is also a Senior Visiting Fellow at the Centre for Governance at the University of Bristol, Visiting Research Fellow at the Centre for Research in Innovation Management (CENTRIM) and a Visiting Fellow at the Institute for Commonwealth Studies. Previously, he has been a MacArthur Foundation Research and Writing Fellow, a Research Fellow at the Institute of Development Studies at the University of Sussex and the United Nations University, and a Visiting Fellow at the Henry L. Stimson Center in Washington. In 2001 he was a Senior Visiting Fellow at the Regional Centre for Strategic Studies in Colombo and a Visiting Professor at the University of Wollongong in Australia. He was the founder director of the Conflict, Security and Development Group at King's College, London, which works closely with leading policy researchers in developing countries. Chris Smith has published widely on South Asian conflict, security and development issues, light weapons proliferation, the military utility of landmines and security sector transformation. His book, *India's Ad Hoc Arsenal*, was published by SIPRI in 1994. Chris Smith is currently working as a freelance consultant as Director of Development Partnerships and Outcomes. He was recently the lead person for the Technical Design Team for the AusAID Australian Community Rehabilitation Programme in Sri Lanka.

Prof. Jonathan Tonge, Department of Politics at the University of Liverpool. Previously, he served as Chair of the Political Studies Association in the U.K. before he became its president in 2008-2011. Professor Tonge has published fourteen books and over fifty articles and chapters on British and Irish politics. He has completed five Economic and Social Research Council and Leverhulme Trust-funded research projects on Northern Ireland parties and paramilitaries during the last decade. He was also director of the ESRC's Northern Ireland 2010 General Election survey.

Prof. Charles Townshend, History department at Keele University and a Fellow of the British Academy. He has held fellowships at the National Humanities Center in North Carolina and the Woodrow Wilson International Center in Washington, DC. He has specialized in the study of political violence and civil emergency, and the history of modern Ireland and Palestine. Amongst his previous publications are histories of political violence in Ireland, public order and public security in Britain, and British counter-insurgency in the twentieth century. He has written *Terrorism: A Very Short Introduction* (revised edition 2011), and *Easter 1916: the Irish Rebellion* (2005). His most recent book was *When God Made Hell: the British Invasion of Mesopotamia and the Creation of Iraq 1914-1921* (2010, published in the USA as *Desert Hell*, 2011).

Prof. Peter Waldmann, Emeritus Professor of Sociology at the University of Augsburg, where previously he was the Director of the Institute of Iberian and Latin American Studies. He studied law and sociology in Munich and Paris, and his research focuses on the political sociology of Latin America, and on terrorism and political violence. He has published ten books and some 110 articles in German, Spanish and English.