

Multimedia Content Coding and Analysis: Unraveling the Content of *Jihadi* Extremist Groups' Videos

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This article presents an exploratory study of jihadi extremist groups' videos using content analysis and a multimedia coding tool to explore the types of video, groups' modus operandi, and production features that lend support to extremist groups. The videos convey messages powerful enough to mobilize members, sympathizers, and even new recruits to launch attacks that are captured (on video) and disseminated globally through the Internet. They communicate the effectiveness of the campaigns and have a much wider impact because the messages are media rich with nonverbal cues and have vivid images of events that can evoke not only a multitude of psychological and emotional responses but also violent reactions. The videos are important for jihadi extremist groups' learning, training, and recruitment. In addition, the content collection and analysis of extremist groups' videos can help policymakers, intelligence analysts, and researchers better understand the extremist groups' terror campaigns and modus operandi, and help suggest counterintelligence strategies and tactics for troop training.

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With the global expansion of *jihadi* (Holy War) movements (e.g., Egypt, Iraq, Spain, U.S., U.K.), there has been an increase in radical Islamist and “*jihadi*” groups use of the Internet. Some reports say that there are thousands of *jihadist* websites that support groups’ community building (*ummah*) and distribute recruitment videos, strategy documents, speeches, and combat computer games.

Although these websites provide an abundance of information, they are almost entirely in Arabic, tied to radical ideologies,¹ challenging to identify and capture,² and part of the groups’ communication strategies.³ Videos produced by *jihadi* groups and their sympathizers are disseminated on the Internet, most notably in online discussion forums and dedicated *jihadi* websites as well as free file-hosting websites. However, materials available on the Internet are also circulated as printed leaflets and videos within different countries.⁴ For example, the videos are being sold in the local Iraqi market alongside pornography.⁵ They are also aired in Al-Zawraa TV, which is a 24-hour satellite station that airs video compilation of attacks on U.S. forces in Iraq. This channel is viewed throughout the Middle East, North Africa, and parts of Europe.⁶

These videos function as cultural screens for multiple enactments, viewings, and interpretations of accepted patterns, themes, and norms (e.g., suicide bombing, martyrdom) while perpetrating the development of shared understandings and evolving glossaries of radical visuals about their ideologies, goals, tactics, and mistakes. The use of recurring visuals and themes in *jihadi* websites and multimedia was substantiated by a content analysis study of *jihadi* groups’ Internet visual motifs (e.g., symbols, photographic images) conducted by the Combating Terrorism Center.⁷

The volume of *jihadi* groups’ multimedia artifacts disseminated over the Web is vast. These artifacts are evanescent in nature, reflect cultural norms, and embed shared messages in them. Consequently, the intelligence, law enforcement, and research communities spend substantial resources and efforts to identify, capture (harvest), monitor, translate, and analyze these video artifacts. However, there is an intellectual gap because there is still limited systematic and evidence-based research about the videos that can be used for comparative analysis and forecasting.

The purpose of this article is to provide an exploratory, evidence-based analysis of how *jihadi* extremist groups use videos to support their goals, such as sharing ideologies and mobilization of potential recruits for perpetrating terrorist attacks. It describes how groups are using the videos to show their resolve, share messages, solicit funds, and support training. It uses the “Jihad Academy” video to provide an illustration of patterns associated with creating and distributing videos via the Internet. The illustration highlights the importance of conducting a content analysis of Arabic *jihad* videos. The content analysis is part of a systematic effort to apply automated methodologies to identify, harvest, classify, analyze, and visualize extremist groups’ video artifacts usage. The content analysis involves the creation of a multimedia coding tool and coding scheme as well as coding sixty Arabic videos to analyze the portrayed events and how the videos support the groups’ goals and *modus operandi*.

***Jihadi* Groups’ Videos**

The *jihadi* groups’ extensive use of the Web, technical sophistication, and media savvy have been described in several studies.⁸ Their websites, blogs, and discussion forums provide hyperlinks to many video clips that vary in language (e.g., Arabic, English, French), size, format (e.g., wmv, ram, 3GP), level of technical sophistication (e.g., amateur,

professionally produced), and purpose (e.g., document attacks, boost morale, commemorate martyrdom).⁹

The Afghani Mujahideen, and, later, Chechen rebels pioneered the creation of videos that captured their operations.¹⁰ The idea behind this was that even if the attack against Russian soldiers was limited in scale, if the operation was filmed and then shown to the world the impact would be greater. However, the Afghani Mujahideen and Chechen rebels never had the means and ability to disseminate their videos on a large scale. In contrast, over the last few years the filming of attacks, the sophistication of video production, quantity, and speed of video dissemination on the Web have become important operational strategies for *jihadi* extremist groups around the world, who demonstrated an ability to quickly adopt and adapt Internet technologies.

The Internet enables the groups to mobilize resources (e.g., communication, money, training, networks) to strengthen their movement¹¹ and launch effective strategies to attain their goals. For *jihadi* groups, this supports three strategic communication goals: (1) legitimize their movement by establishing its social and religious viability while engaging in violent acts, (2) propagate their visions, goals, and slogans by spreading messages to sympathizers in areas that they want to expand, and (3) intimidate their opponents.¹²

The *jihadi* professionally produce videos that are released through media outlets such as the Al-Sahab Institute for Media Production (video production arm of Al Qaeda) and appear frequently on the Al-Jazeera channel as well as the Web.¹³ Videotaping extremist groups' operations resulted in a mimetic effect, similar to that of an "infectious idea." Its multiplier effect among *jihadi* extremist groups emboldened them to produce more videos documenting their brazen attacks on soft targets (especially the beheadings of defenseless civilians), which are then disseminated via the Web.

Extremist groups, such as Al Qaeda and their avid sympathizers, have been incredibly successful in using videos to share messages (e.g., Osama bin Laden's speeches) and provide training.¹⁴ The popular press focus on video reporting (especially the beheadings) has gotten global attention.¹⁵ This has heightened the importance of the videos and may have contributed to the increase of violence.

Dissemination of Extremist Groups' Videos

Some of the videos are mirrored hundreds of times at different websites or forums within a matter of days.¹⁶ The cyber gatekeepers provide global and sustainable access to selective videos in different formats and sizes based on the user's requirements. The storage and distribution of the videos involve using many file-hosting service websites (e.g.,). For example, the Tracking Al Qaeda blog¹⁷ identified the Global Islamic Media Forum (GIMF), which is affiliated with Al Qaeda in Iraq, as the producer of the "Jihad Academy" video that portrays the events of a single day in the life of the Mujahideen (warriors).

According to the Science Applications International Corporation (SAIC), a defense contractor that specializes in homeland security, the "Jihad Academy" video includes various *jihadi* attacks against the enemy and uses both English and Arabic languages, which suggest that it could be targeted toward a broad range of audiences including supporters, sympathizers, and enemies.¹⁸ The persuasive messages make the "Jihad Academy" an excellent example of why videos are important resources that can support recruitment, propaganda, and collective mobilization of members and sympathizers.¹⁹

Figure 1 shows the process of producing and distributing the "Jihad Academy" video which contains several clips shot by Iraq *jihadi* groups such as Al-Jaysh al-Islami fil-Iraq,

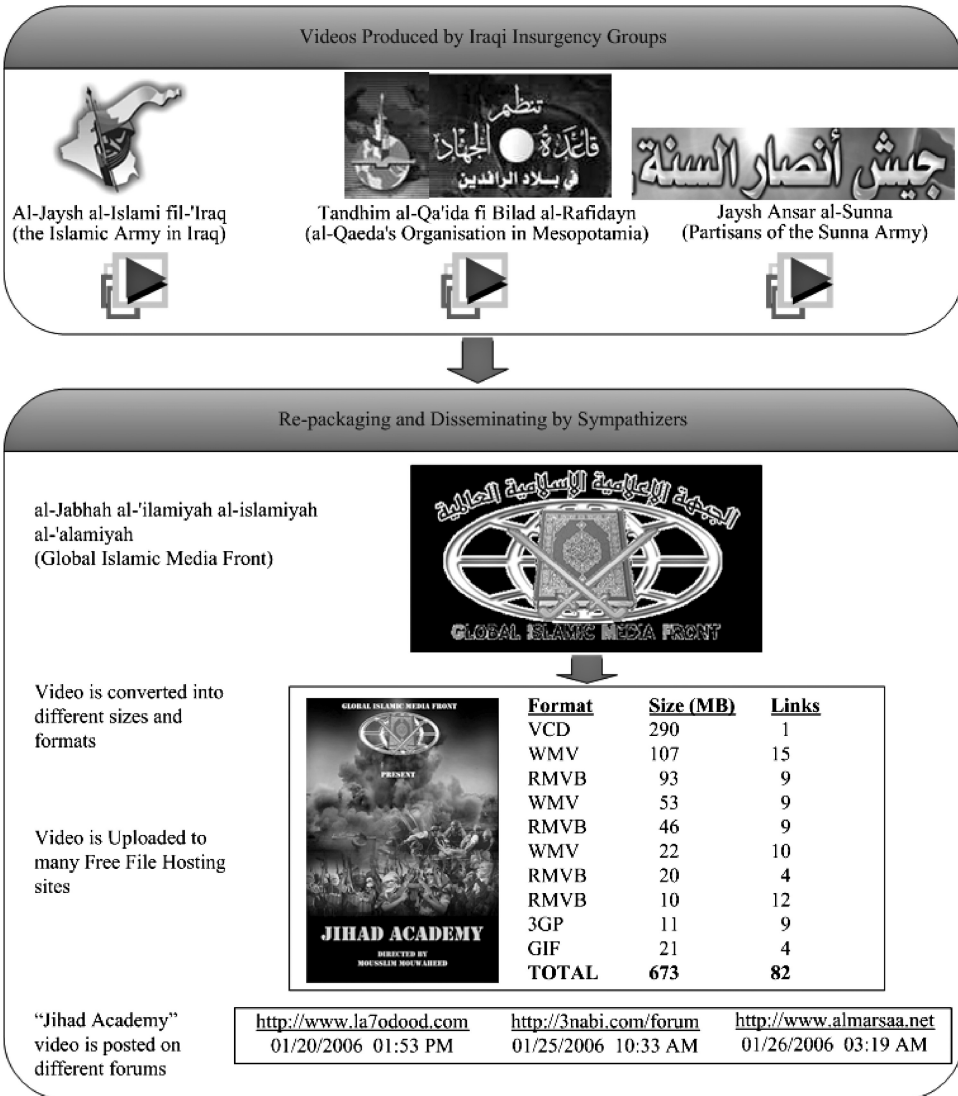


Figure 1. Dissemination of videos in online discussion forums.

Tandhim al-Qa'ida fi Bilad al-Rafidayn, and Jaysh Ansar al-Sunna.²⁰ After the video is produced, copies in different formats are generated and widely disseminated in discussion forums and television outlets such as the Al-Zawraa TV. The video has been posted on at least three discussion forums (la7odood.com, 3nabi.com, and almarsaa.net) within a relatively short period of time.²¹ Each forum provides links to free file hosting websites where the videos are made available.

Collections of Extremist Groups' Videos

The massive production and distribution of *jihadi* groups' videos have prompted organizations to identify, monitor, collect, translate, and analyze the videos. Table 1 identifies

Table 1
Collections of *jihadi* groups' videos

Organizations	Collections	# Videos	URLs
<ul style="list-style-type: none"> ● Global Terror Alert (Director, E. Kohlmann) 	Counterterrorism organizations Clearinghouse on International Terrorism	134 titles	http://www.globalterroralert.com/archive.html
<ul style="list-style-type: none"> ● IntelCenter (Director, B. Venzke) 	Audio/Video	60 volumes*	http://www.intelcenter.com
<ul style="list-style-type: none"> ● Intelwire.com (Editor, J. M. Berger) 	<i>Jihad</i> Videos Online Archive	208 titles	http://intelfiles.com (partial list of videos)
<ul style="list-style-type: none"> ● SITE Institute (Director, R. Katz) 	Multimedia Catalog	400 titles	http://www.siteinstitute.org (partial listing of videos)
<ul style="list-style-type: none"> ● AI Lab, Univ. Arizona (Director, H. Chen) 	Research centers Dark Web Multimedia	706 titles	http://ai.eller.arizona.edu/ (closed research collection)
<ul style="list-style-type: none"> ● MEMRI 	Jihad & Terrorism Studies Project	23 titles	http://www.memri.org/jihad.html
Total (estimate)		1,471 titles	

Note: some are duplicate videos.

*Not included in total # of titles.

Table 2
Categorization of *jihadi* extremist groups' videos

IntelCenter	Intelfiles	Objectives of videos and examples
1. Produced	1. Documentary and propaganda	Boost morale and psychological warfare (e.g., Nineteen Martyrs video, 2002)
2. Operational	2. Operations	Document attacks (e.g., Destruction of the Destroyer, U.S.S. <i>Cole</i> video, 2001)
3. Hostage	3. Direct terrorism	Document hostage attacks and/or executions (e.g., Ansar Al Sunna Executes 3 Iraqi Drivers video, 2005)
4. Statement	4. Communiqués	Spread messages, threats, etc. (e.g., July 7 Transit Bombing Statement video, 2005)
5. Tribute		Commemorate death of members (e.g., Wills of the Heroes video, 2003)
6. Internal training		Document training (e.g., Islamic Extremist Ops/Training video)
7. Instructional		Provide instruction on skills (ex: Manufacture of the Explosive Belt for Suicide Bombing video, 2004) ²⁶

organizations that support the counterterrorism and law enforcement communities, such as the IntelCenter. Most of them monitor, collect, and analyze the videos and generate reports. The Artificial Intelligence (AI) Lab at the University of Arizona collects videos using a systematic Web spidering approach and performs research using content and link analysis.²² The AI Lab's Dark Web video collection is intended for systematic research. The Dark Web is the alternate (covered and dark) side of the Web used by extremist groups to spread their ideas.²³

The IntelCenter, SITE Institute, and MEMRI conduct high-level content analysis of the videos and code them based on several areas such as group, event, format, time, and language. The IntelCenter also categorizes their *jihadi* groups' video collections into seven types such as produced videos, which have the highest production values, and operational videos, which are short quick clips of attacks executed by a group.²⁴ Table 2 presents categorizations of *jihadi* videos and examples. Although there are few fine-grained content analysis schemes of *jihadi* videos, there are terrorism ontologies that provide concept classification of terrorist events in several areas: groups, targets, weapons, and regions.²⁵

Content Analysis of Videos

Extremist groups use video to enable communication, deliver propaganda, and disperse their ideologies, tactics, and strategies. Researchers have identified several factors (e.g., the multiplier effect, the sophistication and ease of video production, low cost, compression options, and global dissemination via Internet) that influence extremist groups' use of videos to support their terror campaigns. This study uses the resource mobilization²⁷ framework to undertake a systematic content analysis of extremist groups' videos and to answer the following research questions:

- What types of video are produced by extremist groups?
- How are the videos used by the *jihadi* extremist groups?
- What *modus operandi* and production features are identified in extremist groups' videos?

From a resource mobilization perspective, the use of the videos is a rational choice for enhancing the groups' communications, propaganda, and training resources necessary to publicize, diffuse, and execute the campaigns. The content analysis process includes several steps described in Salem et al.'s study of *jihadi* groups' videos.²⁸ The process includes the selection of the sample collection of videos, generation of a list of content categories and associated content features, assessment of coding reliability, design of a coding tool, coding the videos, and analysis of results.

Sample Collection

The collection development approach to identify and collect content from extremist groups' websites is described in studies by the Artificial Intelligence (AI) Lab, University of Arizona.²⁹ Table 3 provides a summary of the 706 multimedia files that were downloaded for the Dark Web multimedia collection (6th batch) and categorized using the IntelCenter classification scheme.

From the Dark Web multimedia collection, the Arabic videos produced by insurgents in Iraq were identified. An arbitrary number of sixty videos was chosen for a randomly selected sample. They have a time span of two years, starting in January 2004. The sample videos are listed in Appendix A.

Table 3
Dark Web video collection

Video type	# of videos	Size (MB)	Play time (hh:mm:ss)
Documentary	291	2, 376.91	35:15:31
Suicide attack	22	122.85	02:09:13
Beheading	70	294.95	04:44:03
Hostage taking	26	172.80	02:24:13
Tribute	13	128.69	02:49:40
Message	126	1, 293.91	44:60:48
Propaganda	143	1, 566.98	23:42:19
Instruction	1	16.72	00:08:24
Training	9	196.49	03:20:12
Newsletter	5	553.54	02:36:30
TOTAL	706	6, 723.83	122:06:53
Averages			
Avg. file size	Avg. playtime	Avg. bitrate	
9.5 MB	10:23	247.3 kbps	

Coding the Videos

A Multimedia Coding Tool (MCT) was designed to manage the coding process in a systematic and structured manner. MCT allows the user to create/edit the coding scheme, load the videos, play the video, record observations, and generate reports. The content and technical features of each video were captured, classified, and stored in the MCT. For example, the group's name, video type, and other information were recorded as described in the coding scheme.

The coding scheme consists of *eight high-level classes* such as *general information* that are subdivided into twenty-five content categories (variables). Appendix B provides a list of the classes and content categories. The classes are (1) *general information* with content categories that include title, source, type of video, (2) *date* with categories of reported and acquisition dates, (3) *production* with categories of languages, structure of video clip, special effects, (4) *the group* with categories of group name, media agency, (5) *expressions* with categories of verbal, non-verbal, (6) *location* with categories of country and city, (7) *event* with categories of tactic, weapon, and (8) nature of the *target* with categories of types of victim. The scheme is based on the features of *jihadi* videos, terrorism ontologies, the IntelCenter's categorization, and terrorism incident databases such as the RAND-MIPT and the Institute for Counter-Terrorism (ICT) databases.

Inter-Coder Reliability

The sixty videos were coded over a three-week period by two domain analysts who speak Arabic. To deal with multiple responses for one content category (variable), the coders treated each possible content feature (response) as a separate variable. Due to the open-ended nature of content features, category reliability is measured using Holsti's formula for computing reliability.³⁰ The percentage agreement between the two coders was higher than 0.80 for all content categories that were analyzed.

Types of Videos Produced

For the 60 *jihadi* groups' videos that were content analyzed, the average length was 6 minutes and 32 seconds. The video types, groups' modus operandi, production features, and the groups' video usage were analyzed to identify what types of videos are produced by extremist groups. The results identify two categories of videos (e.g., violent attacks and others) that are used to support the *jihadist* psychological warfare and mobilization strategies. Specific content such as the names of groups involved and the groups' modus operandi (e.g., tactics, targets, weapons) enable the extremist groups to: (a) publicize their actions to diverse communities of supporters, sympathizers, media groups, and enemies; (b) claim responsibility; and (c) disseminate their messages globally to gain legitimacy for their causes. Cultural aspects, including production features (e.g., subtitles, logos), and verbal as well as non-verbal expressions (e.g., religious verses, kissing, hugging) are meticulously embedded in the content to help targeted audiences identify with the *jihadi* movement.

Table 4 provides the frequency count for *jihadi* groups' video types, which are grouped into two categories: violent attacks (e.g., documentary, suicide attack) and others (e.g., tribute, message such as leader statement). Appendix A provides a breakdown of the sixty sample Arabic videos by types. The violent attacks category has the largest number of videos with most videos classified as documentary.

Table 4
Video types

Video types	Frequency
Violent attacks:	
Documentary	38
Suicide attack	4
Beheading	1
Hostage taking	5
Others:	
Tribute	3
Message	6
Propaganda	2
Newsletter	1
Total	60

Documentary Videos

The documentary (attack) videos are often filmed in real-time (show the attacks in action), instructive (take the viewer inside the planning and attack execution processes including scenes of the different weapons such as rocket propelled grenades and skills required for their operations), and low budget. There are limited promotional costs as indicated by low quality of some videos and appeal to diverse audiences because of Arabic and English subtitles. The plots were simple (focus on a few goals, such as to destroy the enemy's tankers), versatile (can be used for meetings, training, fund-raising, motivational sessions), persuasive (display actors' emotions and dedication), succinct (quickly present the materials in short videos), and targeted (producers have complete control over the message and sequence of events).

Documentary videos identify the name and sometimes the logo of the extremist groups but rarely include a direct verbal message from the group. However, they are often accompanied by a wish for the success of the operation in the form of religious or semi-religious phrases. For example, the "Road Side Bomb 1" video is only 12 seconds and in Windows Media Video format (wmv). It shows a bombing in Dayali and identifies the group claiming responsibility as Al-Jabha al-Islamiya lil-Muqawama al-'Iraqiya (Appendix A #15).

The documentary videos often include improvised explosive devices (IEDs), artillery, and rocket attacks. In Figure 2, the distribution of video types indicates the high number of documentary (63%) videos that are used by groups to document and claim responsibility for their attacks. Documentary videos include all types of attacks except suicide attack (7%), beheading (2%), and hostage taking (8%). According to the International Crisis Group, extremist groups in Iraq are waging a war of attrition by avoiding direct confrontation with coalition forces. They adopt hit and run tactics such as IED attacks, which constitute the bulk of the day-to-day operations.

In the sample, nine of the ten extremist groups produced documentary videos. Table 5 provides a breakdown of documentary videos by groups. For example, the Islamic Front of the Iraqi Resistance (Al-Jabha al-Islamiya lil-Muqawama al-'Iraqiya), an insurgency group in Iraq which was formed in 2004, has eleven videos in the sample and all are documentary.

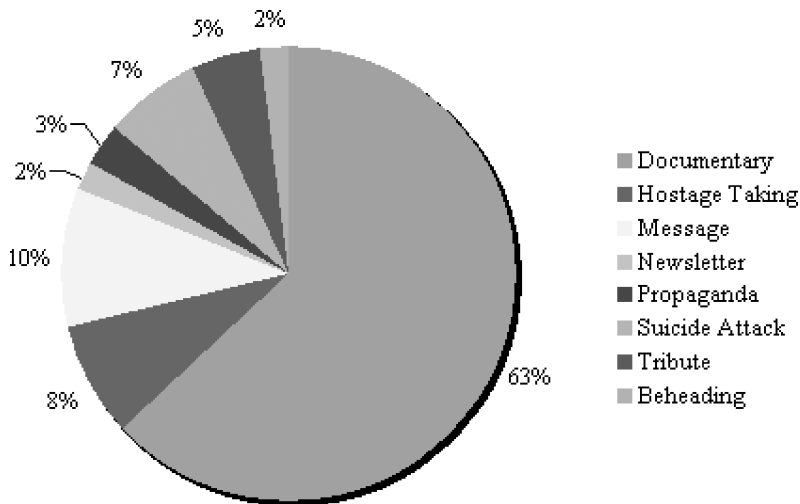


Figure 2. Distribution of videos by types.

Suicide Attack Videos

In contrast to documentary videos, suicide bombing videos are in general more elaborate and show different stages of action. For example, a video of a suicide attack on a U.S. base in Mosul, Iraq, illustrates a process associated with executing an individual attack (Appendix A # 24). In Figure 3, scenes from the suicide attack video are used to illustrate the systematic approach of planning, preparation, execution, and outcome for a suicide bombing. In the same way, videos of beheadings and other types of executions follow a

Table 5
Breakdown of documentary videos by group

# Videos	Group name
11	Al-Jabha al-Islamiya lil-Muqawama al-'Iraqiya (Islamic Front of the Iraqi Resistance)
5	Al-Jaysh al-Islami fil-'Iraq (Islamic Army in Iraq)
0	Al-Qiyada Al-Muwahada Lil-Mujahidin (Mujahidin Central Command)
1	Harakat al-Muqawama al-Islamiya fil-'Iraq (Islamic Resistance's Movement in Iraq)
1	Jaysh al-Iraq Al-Islami (Iraq Islamic Army)
2	Jaysh al-Jihad Al-Islami (Islamic Jihad Army)
4	Jaysh al-Mujahidin (Mujahidin's Army)
1	Jaysh al-Ta'ifa al-Mansoura (Victorious Group's Army)
2	Jaysh Ansar al-Sunna (Partisans of the Sunna Army)
3	Tandhim al-Qa'ida fi Bilad al-Rafidayn (al-Qaeda's Organisation in Mesopotamia)
8	Unclear/unknown

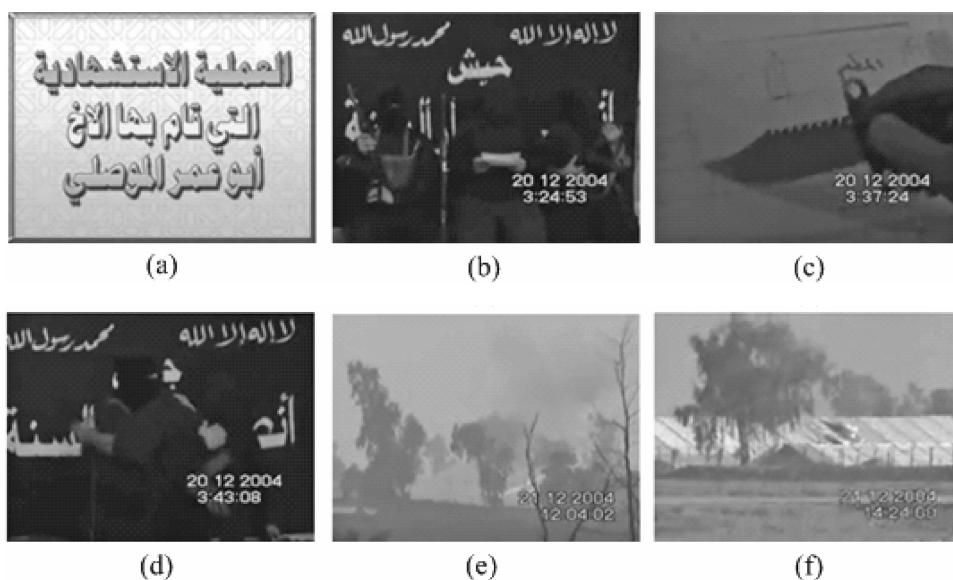


Figure 3. The stages of an attack against a U.S. base in Mosul, Iraq. (a) Title and suicider name; (b) Moral/religious justification; (c) Planning; (d) Farewell; (e) Execution; (f) Aftermath.

structure roughly consisting of first a message by the hostage, followed by a verdict or warning, and typically concluded with a grisly beheading or shooting of the hostage.

The category of video types entitled “Others” includes nonviolent activities such as tribute (5%), message (10%), propaganda (3%), instruction, training, and newsletter (2%). The sample did not contain training or instructional material. It was observed that direct training and instructional content is in the form of text-based manuals.

How the Groups Used the Videos

Based on the analysis of video types, a matrix of *jihadi* groups’ videos is used to describe how the videos are used by the extremist groups. The matrix classifies the videos into four basic types according to two usage dimensions: operational versus non-operational and individual-oriented versus group-oriented. Figure 4 presents the schematic diagram.

In Figure 4, a video can be classified as operational because it clearly displays a violent attack. Non-operational videos center on showing nonviolent activities such as delivering a message or paying tribute to a fallen comrade. Although nonviolent activities may include threats, they are still considered as nonviolent acts. On the other hand, the other dimension involves several actors such as a group or a single individual. A suicide attack is a violent act (documentary) committed by a single individual. The focus of the documentary videos is the group as a whole (claiming responsibility), as opposed to the individual in the case of suicide attacks. Tributes and messages often focus on an individual, such as a martyr (shahid).

Most of the sample videos fall into quadrant 2 because they are group-oriented violent operations (e.g., bombings, beheadings). Table 6 shows to which quadrants the videos produced by various groups belong. Because most groups produced documentary videos, they seem to view this as the main and natural usage of videos. In the sample, suicide attack videos were produced by only two groups: Jaysh Ansar al-Sunna and Tandhim al-Qa’ida

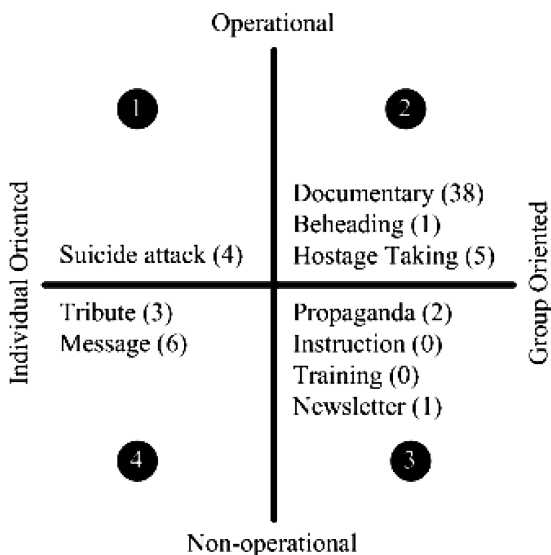


Figure 4. Matrix of video types and usages (# videos in parentheses).

fi Bilad al-Rafidayn. Quadrant 4, non-operational and group-oriented, has the second most videos. The main goals of the videos appear to be advertising their ideologies, legitimizing their actions, indirectly recruiting and communicating with supporters as well as sending threats to enemies.

Groups Identified

The authors identified ten unique groups that took credit for the videos. In eight videos, the groups did not identify themselves. In Table 6, the four most prominent groups (in terms of the number of videos) are in bold. According to the International Crisis Group, they are also the most active groups of the Iraqi insurgency.³¹

Among the groups identified, nine were involved in violent attacks. Extremist groups, such as Tandhim al-Qa'ida fi Bilad al-Rafidayn (previously led by al Zarqawi who was killed in a U.S. operation in June 2006), produced the aforementioned Mosul suicide bombing depicted in Figure 3. This video, in particular, supported organizational learning and provided mental models of the group members' dedication, closeness, emotional rituals, and skills as they executed the attacks. Scenes provide emotional and spiritual support because of the hugging, greeting, and praying together.

Groups' Modus Operandi

The major targets identified in the videos are Western military vehicles. Table 7 provides a list of the types of targets identified. Military vehicles constitute 56% of the total identified targets in the sample, whereas 20% of the identified targets are military bases. In this sample, there is a pattern of the emergence of specialization among extremist groups. For instance, Al-Jabha al-Islamiya lil-Muqawama al-'Iraqiya carried out ten road side bombings and artillery attacks against military vehicles and bases. However, they did not conduct any beheadings. In contrast, Tandhim al-Qa'ida fi Bilad al-Rafidayn has executed

Table 6
Breakdown of video matrix by group

# videos	Group name	Quadrant			
		1	2	3	4
11	Al-Jabha al-Islamiya lil-Muqawama al-'Iraqiya		•		
7	Al-Jaysh al-Islami fil-'Iraq		•		•
3	Al-Qiyada Al-Muwahada Lil-Mujahidin		•		•
1	Harakat al-Muqawama al-Islamiya fil-'Iraq		•		
1	Jaysh Al-Iraq Al-Islami		•		
3	Jaysh Al-Jihad Al-Islami		•		•
4	Jaysh al-Mujahidin		•		
2	Jaysh al-Ta'ifa al-Mansoura		•	•	
8	Jaysh Ansar al-Sunna	•	•	•	•
12	Tandhim al-Qa'ida fi Bilad al-Rafidayn	•	•	•	•
8	Unclear/unknown		•	•	
60	Total	4	44	3	9

Table 7
Types of targets

Facility type	% videos
Military vehicle	56%
Military base	20%
Unknown	13%
Aircraft	7%
Diplomatic	2%
Transportation infrastructure	2%

several hostage takings. The International Crisis Group states that an informal division of labor and specialization is taking place within the Iraqi insurgency.

Most of the videos explicitly mentioned locations of the depicted attacks. The locations are often mentioned in the subtitles and occasionally the narrator provides the name of the location. Most attacks occurred in the Sunni triangle, which includes Balad, Dayali, Baghdad, Fallujah, and Abu-Ghraib. In addition, U.S. military installations in Mosul are frequently attacked, as reported in the international media. Moreover, each extremist group operates in selected regions of the Sunni triangle. For instance, the Al-Jabha al-Islamiya lil-Muqawama al-'Iraqiya has operated mostly in the Salah al-Din, Diyala, and Baghdad governorates, whereas Tandhim al-Qa'ida fi Bilad al-Rafidayn operates mostly in Anbar, Baghdad, and Salah al-Din. Our results are compatible with media reports on the Iraqi insurgency.

IEDs are the most common type of weapons utilized. Preparing, implanting, and detonating the IED is often depicted. Mortar and rocket attacks are the second most frequently observed weapon. Other weapons include assault rifles and rocket propelled grenades (e.g., RPG) and, less frequently, suicide vehicles. These weapons are typically used in guerilla warfare. Figure 5 shows a member of an extremist group launching a RPG to disrupt a supply line (Appendix A #20).

The RPG is an inexpensive and single-shot weapon that is devastatingly effective yet easy to operate with very little training.³² The RPG and mortar attacks can impose considerable damage without conducting close-range engagements.



Figure 5. RPG attack to disrupt a supply line.



Figure 6. Video of bin Laden with English subtitles.

Production Features

A range of production quality patterns, from amateurish to professional, were identified. In addition, diverse special effects were identified, such as the use of subtitles (English or Arabic), the groups' logos, background hymns (with/without music), and excerpts of leaders' speeches. Fifty-five videos had special effects.

Figure 6 provides a screenshot of a video with English subtitles that shows Bin Laden giving a speech. Bin Laden's messages are often directed toward a worldwide audience. Al Qaeda's media agency "Al-Sahab" produced the bin Laden interview excerpt in the sample (Appendix A #48). This agrees with reports from the SITE Institute and IntelCenter about Al Qaeda's use of a production company to plan and produce high quality videos.

Ideologies and customs identified in the videos were consistent with real-world activities. For example, nasheed (hymns) in *Tandhim al-Qa'ida fi Bilad al-Rafidayn* videos were not accompanied by musical instruments, abiding by the strict stance on the use of such instruments in Salafi ideology.

In addition to being a central element of their psychological warfare, extremist groups in Iraq regard videos as an effective means for propagating their ideology. *Jihadists*, like other extremist groups, want to spread their movement to many places in the world.³³ To that end they seek to legitimize the "Salafi Jihad Enterprise" as well as culturally identify with Muslims worldwide. The archetype is an elaborate audio-visual portrayal of the suffering inflicted by "Western occupiers" on Muslims in Iraq, followed by a selection of religious texts justifying violence. A majority of the videos referred to verses from the Koran justifying violence under certain circumstances. These observations have been reported previously by other researchers and columnists.³⁴

Along the same lines, beheadings or gangster-style execution videos follow a common scenario. Whereby an extremist group member briefly introduces the action to follow, the hostage is then allowed to give his message and to answer questions, and finally a verdict based on Salafi ideology is read and is immediately followed by the execution.

Conclusion

This article provided an exploratory analysis of sixty Arabic extremist groups' videos to identify the types of videos, groups' usage patterns including their modus operandi and video production features. Forty-eight videos showed violent attacks; some included

planning sessions with maps, diagrams, and logistical preparations. A matrix of *jihadi* groups' video was proposed that classifies the videos based on usage dimensions: operational versus non-operational and individual-oriented versus group-oriented activities.

By using videos, the *jihadi* extremist groups have at their disposal a potent media perfectly appropriate to our global communication avenues to spread extremist ideologies, radicalize sympathizers, recruit potential members, provide many learning opportunities, and to tell/re-tell success stories. These galvanize an organizational saga that is then used to further legitimize the extremist groups' claims of victory. The organizational saga is emphasized when the viewers replay videos (reinforcement), store images and radical messages (e.g., usage of IEDs), hear expert commentary (suicide attack planning and execution), view interactions (social and emotional support with hugging), in the planning and execution (megacognitive event), and listen to devoted players in an operational environment (social event). This supports "borderless and informal" organizational learning and training because it becomes easier to acquire second-hand experience such as imitating violent attacks depicted in the documentary videos.

Although the intelligence, policymaking, and research communities are monitoring, translating, and analyzing the videos for law enforcement investigation, troop training, planning, forecasting, and policy formulation, they must also exploit approaches for effective and efficient multimedia dissemination of credible counter arguments. Dissemination of credible counter arguments can help challenge the global diffusion of extremist ideology and offer alternative approaches. As described in the Critical Incident Analysis Group report,³⁵ the myths and disinformation propagated in the groups' videos can be countered by designing and disseminating credible messages from authentic and trusted sources at the grassroots level. The credible and multilingual messages should be in multimedia format (e.g., videos, games, audios) with graphic visuals to magnify the impact and be available via television, radio, and the Internet.

In addition to the counter arguments, the communities should further explore approaches for enhancing and strengthening people's understanding of diverse cultures and religions. Extremist groups' video production and dissemination have now anthropomorphized into global, multicultural, virtual operations in which people collaboratively create, transform, duplicate, repackage, and distribute videos in various formats (e.g., wmv, vcd), sizes (e.g., 22 mb, 290 mb), languages (e.g., Arabic, English, French), and content options (e.g., downloadable file, streaming video). For an example, see the discussion of the "Jihad Academy" video.

The video content is also available via television, printed leaflets, cartoons, games, and audios. The ideas shared in the videos are viewed, interpreted, and acted on by people from various cultural and religious backgrounds. Some may have limited diverse cultural and religious knowledge. This suggests that the communities must consider the use of cultural intelligence training and programs for enhancing people's capability to critically interpret and analyze violent messages generated by extremist groups.

A modest contribution of this exploratory study is the discernment of an informal division of labor and specialization among the extremist groups. The matrix we have developed in this study has helped disaggregate the groups so their specializations (e.g., types of activities depicted in the videos, modus operandi, video production features) are made prominent. Clearly, the information content of these videos that are churned out in exponentially increasing pattern does help reveal the various specializations that comprise the extremist groups. A chronoholistic approach to help further disaggregate the groups and their specialization is an advantage afforded by the videos.

The researchers, practitioners, and policymakers may perhaps get additional insight as to what counterterrorism strategies are effective and ineffective by understanding the groups' "growth" trajectories displayed in the videos. A clear understanding of the cultural intelligence at play within the various groups may help enhance our counterterrorism efforts. Video content analysis may provide us with important clues and information vital in recognizing how the extremist groups think, operate, and strategize. With funding, it should be expanded to include automatic extraction of structural (e.g., subtitles, images) and semantic content (e.g., weapons, target locations).

As with all research, this study has its limitations. Because it was limited to a sample of sixty Arabic video clips, future studies of this kind should endeavor to enlarge and broaden the sample and verify if similar results are found. Another limitation is the time span of two years. Further evidence-based research should also be done to provide additional insights into extremist groups' operations, organizational learning styles, and mobilization strategies. Finally, the present of our team of native analysts who, in addition to being proficient in translating the texts in Arabic language to English, are able to put the content within the sociopolitical and cultural environmental context. The absence of this latter skill would have created serious gaps that could have derailed our analysis.

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Appendix A
List of sample videos

ID	File name	Time (m:s)	Title	Type
1	0405200501.rm	08:27	Abduction and execution of Jasim Mahdi	Beheading
2	01.(1).wmv	00:05	Hummer destruction in Taji	Documentary
3	0130200501.wmv	01:30	American embassy attack	Documentary
4	02.(1).wmv	00:49	Rocket attack on American base in Dayali	Documentary
5	0330200501.rm	00:15	Short clips	Documentary
6	03-320.wmv	00:55	Mortar attack on American base—Ad-Dalou'yah	Documentary
7	0416200502.wmv	00:14	2 IED attacks	Documentary
8	0504200501.wmv	03:20	Sniper attacks	Documentary
9	0504200502.wmv	04:35	The IED	Documentary
10	0504200503.wmv	08:25	Downing of a Bulgarian aircraft	Documentary
11	0513200501.wmv	11:05	Dedication to the pigs	Documentary
12	06-h.wmv	00:11	Double operation	Documentary
13	07-h.wmv	00:18	Attacking American base—Al-Khales	Documentary
14	08.wmv	00:43	IEDs in Mushahada	Documentary
15	10.wmv	00:12	Road side bomb 1	Documentary
16	11.wmv	00:58	Mortar attack on American base 1	Documentary
17	16.wmv	01:16	Attacking American base—Dyali	Documentary
18	18.wmv	00:18	Road side bomb 2	Documentary
19	abugraib.wmv	02:30	Variety of operation	Documentary
20	ahdath_fallujah.wmv	01:26	Supply line disruption	Documentary
21	almokawama3.wmv	00:36	Mortar attack on American base 2	Documentary
22	almokawama5.wmv	00:13	2 attacks	Documentary
23	alsunnahcellphone.wmv	00:45	Attack on military vehicle	Documentary
24	amalyah.wmv	03:53	Mosul attack	Documentary
25	haifa-control.wmv	08:46	Haifa street battle excerpts	Documentary
26	îê(c) ýééáíâîî.rm	01:45	Hummer attack 1	Documentary
27	insurgent1.wmv	03:19	Collection of operations	Documentary
28	insurgent4.wmv	01:44	Gun battles	Documentary
29	Jihad Academy_93Mb.rmvb	28:30	Jihad Academy	Documentary
30	jonood.ram	01:08	Killing of seven American soldiers	Documentary

(Continued on next page)

Appendix A
List of sample videos (*Continued*)

ID	File name	Time (m:s)	Title	Type
31	labayk_fallujah.wmv	05:38	Labayk Fallujah	Documentary
32	mosul.wmv	36:46	Operations summary 1	Documentary
33	samara.(1).wmv	00:52	Attack on Iraqi interior minister vehicle	Documentary
34	shot2.wmv	00:58	Katibat Al-Ansar operation	Documentary
35	shot3.wmv	00:54	Mujahedin operation in Abu-Ghraib	Documentary
36	taji_hit.rm	01:19	Taji rocket attack	Documentary
37	us_bomb_mosul.wmv	00:41	Mosul bomb	Documentary
38	us_humvee.wmv	00:50	Hummer attack 2	Documentary
39	walakinallahrama.wmv	40:48	Operations summary 2	Documentary
40	0330200502.wmv	05:01	Abducted and executed truck drivers	Hostage taking
41	0401200501.wmv	05:26	Capture and release of 16 workers	Hostage taking
42	0408200502.wmv	03:28	Execution of Iraqi policeman	Hostage taking
43	farsi.wmv	00:46	Iranian hostage	Hostage taking
44	muhafiz.rm	05:57	Muhafiz abduction	Hostage taking
45	8-4-2005.rm	08:00	Jaish Islami Fi Al-Iraq statement	Message
46	message-from- resistance.wmv	04:59	Communique NO. 6	Message
47	Movie.wmv	00:25	Usama clip	Message
48	obl09232004.mpeg	02:19	bin Laden message	Message
49	rafidan4.wmv	05:54	Al-Jaish Al-Islami Fi Al-Iraq Communique	Message
50	rafidan5.wmv	08:23	Dale C. Stoffel Scandal 5	Message
51	serio0815.rm	03:56	Sawt Al-Khilafah (Voice of the Caliphate)	Newsletter
52	1basha2er.wmv	44:11	Basha'r Al-Nassar	Propaganda
53	messages_fallujah.wmv	21:10	Fallujah volcano	Propaganda
54	AlMuselmess.wmv	05:28	Abu Omar Al-Musli suicide attack	Suicide attack
55	hotel.wmv	02:50	Sodayr suicide attack	Suicide attack
56	suicidehand.wmv	02:51	Road side bomb—Body parts	Suicide attack
57	voiture_kamikaze_1.wmv	04:06	1st suicide attack British troops	Suicide attack
58	1rayat.wmv	31:38	Operations summary 3	Tribute
59	altawhiddocumentary.wmv	54:48	Sheikh Abu Anas Al-Shami (The Lion)	Tribute
60	shuhadas_alharamayn.wmv	06:47	Shuhada Alharamayn	Tribute

Appendix B
Coding scheme

Class	Content category	Content feature
General information	Title	Specify the reported title of the video
	Source	Specify the source website/forum
	Batch #	Specify the AI batch number
	Type of video	Documentary, Suicide attack, Beheading, Hostage taking, Tribute, Message, Propaganda, Instruction, Training, Newsletter
Date	Reported date	Specify the activity date
	Acquisition date	Date the video was obtained
Production	Language	Specify the language
	Special effects	Logo, English subtitles, Arabic subtitles, None
	Accompanying music/Hymn	Hymn music, Hymn + music, None
	# Multiclip	Specify the number of multiclips
Extremist group	Extremist group name	Specify the reported group name
	Group Media agency name	Specify the reported group media agency name
	Sub group name	Specify the reported group sub name.
Expressions	Verbal	Religious verses, Poetry, Others
	Non-verbal	Kissing, Hugging
Location	Reference to media	Arab Media, Western Media
	Country	Specify the event country
	City	Specify the reported city
Event	Tactic	Suicide Bomb, Shooting, Artillery Attack, Mortar Attack, Rocket/Missile Attack, Knife Attack, Assassination, Bombing, Hijacking, Hostage-taking, Vandalism, CBRN Attack, Threat, Vehicle Attack, Aircraft Downing, Kidnapping, Grenade Attack, Unclear/unknown

(Continued on next page)

Appendix B
Coding scheme (*Continued*)

Class	Content category	Content feature
Target	Weapon	Improvised Explosive Devices (IEDs), Mortar and rocket, Bladed weapon, Poison/biological agent, Automobile/ other vehicle, Assault rifles, grenades, Unclear/unknown
	Parts/Stages	Threat and outcome, Act and outcome, Outcome, Act being perpetrated, Threat
	Victim type	Humanitarian/NGO, Military Personnel, Religious Figure, Top Government Official, Health Care, Diplomatic, Civilian, Businessman, Government Personnel, Other, Unknown
	Victim characteristics	Iranian, American, British, Iraqi, Canadian, French, Spanish, Unknown
	Facility type	Military Base, Military Vehicle, Airports & Airlines, Business, Government Building, Political Party, Paramilitary, Transportation Infrastructure, Energy Infrastructure, Police Facility, NGO, Convoy, Religious Institutions, Civilian Vehicle, Ship, Hotel, Unknown
	Facility characteristics	American, British, Iraqi, Bulgarian, Unknown

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