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Final Summary Overview

NIJ FY 13 Research and Evaluation on Radicalization to
Violent Extremism in the United States

SEQUENCING TERRORISTS' PRECURSOR BEHAVIORS: A CRIME SPECIFIC ANALYSIS

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SEQUENCING TERRORISTS' PRECURSOR BEHAVIORS: A CRIME SPECIFIC ANALYSIS

I. PURPOSE OF THE PROJECT

Recently completed research (Smith et al., 2016) suggests that radicalization toward violence is best viewed as a process – a journey that begins with a less-radical identity and moves toward a more radical identity and corresponding orientation. Efforts to test this theoretical assertion revealed that the process of identity construction involves a variety of behaviors that David Snow has referred to as “identify work” (Snow and Machalek, 1983; Snow and McAdam, 2000; Snow, 2004; Cross and Snow, 2011). One type of identity work – *demonstration events* – appeared to be particularly relevant to our ability to predict radicalization toward violence and subsequent terrorism. The commission of acts in preparation for a terrorism incident serves to “demonstrate” the individual participant’s commitment to the cause as well as solidifying their radicalization to violence. The number and type of these demonstration events were significantly related to the terrorists’ rank or status in the cell or group, the severity of preparatory crimes they committed, and the number of terrorism incidents in which the individual was involved (Smith et al., 2016).

While the former project was highly theoretical and found support for framing and identity theory, the findings from that project led us to examine the issue of “demonstration events” from a more practitioner-oriented approach. Using a “crime specific” analysis, we tested different hypotheses focusing on applied results with utility for intelligence analysts and law enforcement officials. Although we have learned a great deal about the geospatial patterns of individual actors in the terrorists’ planning process over the past decade, the *temporal* dimensions of terrorists’ behaviors remained virtually unexamined, despite having a substantially important impact on policy and practice at the local and federal level.

In an extensive review of geographical studies of terrorism, Bahgat and Medina (2013:38) summarized that “the terrorist attack cycle occurs along specific spatial trajectories that can be identified and possibly policed.” Although there is little empirical research on the subject, the same can reasonably be said about the *temporal* aspects of terrorism. Terrorism, like all human activity, is limited by both space *and* time. Specifically, we were interested in ascertaining how, and to what extent, temporal limitations manifest themselves in structured or patterned distributions. A preliminary examination of temporal data from the American Terrorism Study (ATS) strongly suggested that terrorists’ precursor conduct occurs in a rational sequence of events that varies in time by *group type*, *group size*, and *type of incident* planned.

The nature of terrorist offending in the United States has changed during the last 20 years in some distinctive ways. Because we cannot assume that precursor activities operate uniformly for all terrorism offender types, a goal of this project was to examine temporal precursor patterns across unique types of terrorist offenders and varying organizational structures under which they operate. An in-depth understanding of precursor activities requires us to consider different types of terrorist groups, including far-right, single issue (eco-terrorists and animal rights extremists), Al Qaeda-inspired terrorists (AQAM)¹, and perhaps, most importantly, the rise of Islamic State of Iraq and al-Sham (ISIS).² Single-issue groups that are driven by environmental and animal rights extremist ideologies have superseded the historic threat to the United States from left-wing terrorist groups with Latin American roots. Additionally, far-right terrorist activity appears to be making a resurgence in the United States, although attacks have not generally been committed by organized terrorist groups against highly symbolic targets as they were throughout the 1980s and 1990s. The most obvious change is the advent of AQAM and ISIS-inspired terrorism in the 21st

¹ AQAM or “Al Qaeda and Affiliated Movements.”

² Also known as Islamic State (IS or as the Islamic State of Iraq and the Levant (ISIL). For the purposes of this report, we will refer to persons affiliated with this group as ISIS or ISIS affiliates.

century that continues to be a primary focus of Homeland Security and other law enforcement officials. Along with different ideological motives, anecdotal evidence suggested that terrorists motivated by varying ideologies often select unique targets, rely on different weaponry, and choose different modes for delivering elements used in attacks. Carrying out different forms of attacks, it is plausible to expect that the temporal sequencing of preparatory and other precursor crimes and activities also vary in important ways. Identifying significant temporal differences across ideological group categories (e.g., far-right, eco-terrorist, AQAM, ISIS) can assist law enforcement in the investigatory stages following terrorist attacks and, more importantly, inform proactive counterterrorism strategies.

The project focused on three major issues related to terrorists' precursor behaviors: (1) a subgroup analysis of temporal, crime-specific patterns by group type, (2) the nature of the planning process, and (3) factors associated with the outcomes of terrorist incidents (success or failure). Each of these issues is described in greater detail in the subsections below.

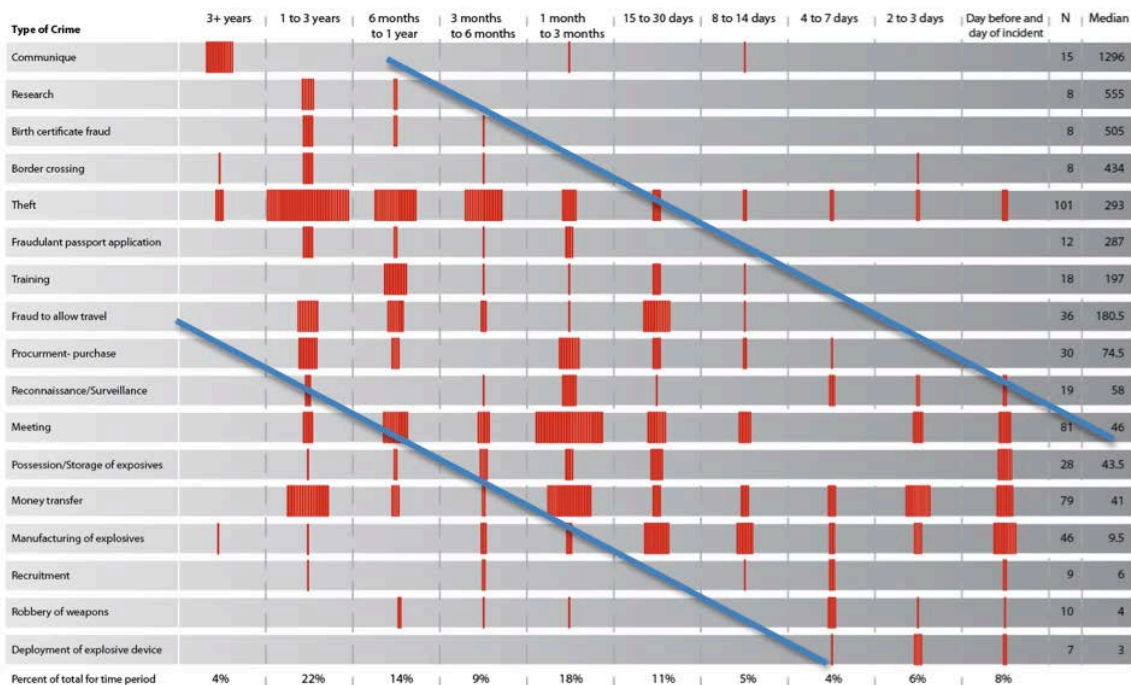
Categories of Terrorism and Specific Terrorist Groups

Conventional wisdom suggests that specific preparations must take place before a terrorist incident can occur. Unlike traditional crime, which tends to be highly spontaneous, acts of terrorism usually involve weeks, if not months, of preparation. For example, before a bomb can be detonated, it must be built; before it can be built, the components must be acquired; and before components are acquired, the terrorists must be taught (and learn) what components are needed and how to assemble the device. Equally as important, and perhaps simultaneous to these activities, the terrorists must learn, through a process of radicalization, why such behavior is not only justifiable, but necessary. Although the concept of "self-radicalization" has been prominent in the media since the 2013 bombing at the Boston Marathon, radicalization of the

overwhelming majority of terrorists who have targeted the United States over the past thirty years involved personal interactions with mentors and/or like-minded individuals. Some of these meetings may not have been illegal originally, but eventually they became overt acts of a conspiracy and essential elements of crimes listed in federal indictments.

Despite the logic (and importance) of the above discussion regarding crime-specific sequencing, we found no specific empirical research on this topic. Therefore, we identified the most common precursor activities committed from a sample of 143 terrorism incidents in the United States.³ These behaviors are presented in Figure 1 below. A general sequential pattern emerged from this preliminary analysis in which it became apparent that precursor conduct occurred in a logical, rational sequence.

Figure 1: Precursor Activities Occur in a Generally Predictive Sequence



³ Exploratory analysis conducted in preparation of proposal for this project.

Subsequent analysis revealed that particular types of behaviors were similarly distributed regardless of group type. For example, recruitment generally occurred early in the planning process, while the acquisition of weapons or explosive materials and meetings were concentrated in the latter stages. Despite the common sequencing of these behaviors, there was substantial variation by group type in the median number of days when these behaviors occurred. In particular, half of the “acquisition of weapons/explosives” events for the “environmental” incidents occurred within 12 days of the incident, while half of these same behaviors for “AQAM” incidents occurred 113 days prior to the terrorism incident.⁴ The overall length of the planning process also varied significantly depending on the ideology of the groups involved. These marked differences by group type required further examination.

With the advent of ISIS activities beginning in 2013, we were also interested in ascertaining whether the behaviors of ISIS-affiliated plotters were similar to the behaviors of other American terrorists and, in particular, whether the preparatory sequencing of incidents attributed to ISIS-affiliated perpetrators varied from earlier AQAM incidents. A general hypothesis emerged from these preliminary findings.

1. *Crime specific temporal patterns of precursor conduct vary significantly by group type.*

Nature of the Planning Process

This portion of the project examined primarily two aspects of the terrorist’s planning process: (1) factors associated with the volume of preparatory behaviors and (2) factors associated with the length of the planning cycle.

Those responsible for protecting the homeland must contend with the “new” and seemingly growing threat of lone actor terrorists and apolitical mass casualty shooters (Michael,

⁴ Exploratory analysis conducted in preparation of proposal for this project.

2012, Spaaij, 2010). Conventional wisdom holds that terrorists operating outside of formal command and control structures present fewer opportunities for detection and prevention, in part due to the scope of planned attacks and lack of inter-group communication (Berger, 2012). Recent research on lone wolves, however, contradicts conventional wisdom and suggests that lone actor terrorists do associate with other like-minded individuals and can go to great lengths preparing for a terrorist attack (e.g., Gill, Horgan, and Deckert, in press; Pantucci, 2011). But which is actually more difficult for law enforcement to detect – a lone wolf or a larger group of conspirators? One might argue that regardless of the size of the group, commission of a bombing, for example, requires a certain number of preparatory behaviors – that the volume of preparatory behaviors would remain the same. Consequently, smaller groups or lone wolves would simply be required to do more of these behaviors by themselves (which might be more likely to attract the attention of law enforcement than if the behaviors were distributed among several persons). Therefore, we sought to examine the relationship between group size and the known volume of preparatory conduct committed by these persons/cells/groups.

Similarly, we contended that the more “sophisticated” the planned terrorist incident, the more planning is required to carry out the attack. While some research has shown that “organizational structure” plays an important role in the length and complexity of the planning process of a particular terrorist incident (Crenshaw, 1988; Hoffman, 1998) we suggested that the explanation may be much simpler – that the *type or sophistication* of the incident planned may be a more important predictor of the length and number of preparatory behaviors associated with a terrorist incident than organizational structure. For example, Smith and Damphousse (2009) found that although the environmental group known as “the family” involved a rather large conspiracy consisting of over twenty participants, the simplicity of the improvised incendiary

devices (IIDs) used in their campaign of “ecotage” resulted in remarkably short planning cycles with fewer precursor behaviors than other terrorist groups.

Six additional hypotheses for this project emerged from this discussion:

Factors Associated with the Volume of Preparatory Behaviors

2. *The smaller the group, the fewer the number of known precursor behaviors.*
3. *The larger the group, the greater the number of recorded meetings among group members.*
4. *The more “sophisticated” the planned incident, the greater the number of precursor events required to carry out the plot.*

Factors Associated with the Length of the Planning Cycle

5. *The larger the group, the greater the length of the planning process.*
6. *The greater the sophistication of the planned incident, the greater the length of the planning process.*
7. *The larger the group, the more “sophisticated” the planned incident.*

Attack Outcomes (Success or Failure)

What works and what does not? Terrorists are continually revising their planning strategies based on the success or failure of previous attempts (Smith, Damphousse, and Roberts, 2016; Klein, Gruenewald, and Smith, 2016; Smith, Gruenewald, Roberts, and Damphousse, 2015). Law enforcement must do the same (see Damphousse, Smith and Jackson, 2011 for an example of usage of the American Terrorism Study to assess intervention efforts). Are terrorists more likely to be successful with a short planning cycle or a lengthier one? For terrorists, is it better to temporally distribute precursor behaviors over a longer period of time to avoid detection or is it more productive to commit the precursor acts in a “flurry” immediately prior to the incident? Is it more difficult for law enforcement to detect the activities of a “lone wolf” who

commits a series of precursor behaviors or is it more difficult to detect the activities of people who distribute the preparatory behaviors among several members of the group? Despite a diligent search of the literature, we found no research that examined these issues. Consequently, we generated a series of hypotheses based primarily on our prior exploratory findings. We argued that a more “sophisticated” terrorist incident normally would require more preparation, more people, and more time than simpler plots. Although the relationships we propose among these variables suggest that they may be all linked to “success or failure” in a more complex causal model, due to the exploratory nature of our research, the hypotheses are stated as bivariate relationships.

Common sense suggests that, all things being equal, the more times a behavior is repeated, the more likely it will be observed by a third party. Likewise, we contended that the greater the number of preparatory behaviors required to commit a terrorist incident, the greater the probability that one or more of those preparatory acts will be observed and reported to the police. Similarly, we believed that the more people who were involved in a terrorist plot, the greater the probability of detection and law enforcement interdiction. The logic for this argument emerges from extremist leaders themselves. Louise Beam, for example, in advocating for the transition to “leaderless resistance,” contended that the fewer persons involved in the terrorist’s planning process, the lower the likelihood of civil and/or criminal liability for group leaders (Damphousse and Smith, 2004). Finally, if a larger number of persons and a larger number of preparatory behaviors is required to carry out more sophisticated attacks, it also seems logical that these types of attacks would require more time during the planning and preparation process. These hypotheses are stated below.

Factors Associated with Terrorist Attack Success or Failure

8. *The greater the number of preparatory behaviors, the greater the probability of attack failure.*
9. *The longer the planning process, the greater the probability of failure.*
10. *The larger the group, the greater the probability of failure.*
11. *The more “sophisticated” the planned incident, the greater the probability of failure.*

II. METHODOLOGY

Data used in the analysis were compiled from the American Terrorism Study (ATS), an Oracle 11g relational database composed of fifteen tables that include information on the demographic characteristics of terrorism offenders, federal charges and other legal variables, the geocoded locations of perpetrator’s residences, pre-incident activities such as meetings and precursor crimes, terrorism incidents in the United States, and temporal data on many of the precursor activities and plotted incidents. A description of the ATS database, the method and sample used in this project, and the types of analyses conducted are provided in the following subsections.

Sources of Data

The American Terrorism Study (ATS) is a compilation of data primarily derived from the federal criminal court records of persons indicted for “terrorism or terrorism-related activities” for the period 1980-present. In 1987, the FBI’s Terrorist Research and Analysis Center (later renamed the Counterterrorism Threat Assessment and Warning Unit) provided the principal investigator with the names of persons indicted under the FBI’s Counterterrorism (CT) Program. After the Alfred P. Murrah Federal Building bombing in 1995, the FBI, NIJ, and the P.I. collaborated with the U.S. House of Representatives Judiciary Subcommittee on Crime in which

the House Subcommittee assumed sponsorship of the ATS. In 2002, the Senate Judiciary Committee assumed this role under Senator Jeff Sessions (R-AL). After 2005, the names of international terrorists indicted in federal courts were provided directly by the FBI through the National Counterterrorism Center (NCTC), while the names of domestic terrorists have been extracted primarily from the websites of U.S. Attorneys offices. As such, the persons included in the database are indicative of the FBI's official definition of terrorism (e.g., see FBI, 1998). Since the FBI has exclusive jurisdiction over the investigation of acts of terrorism against U.S. citizens or property, the ATS includes only individuals and cases prosecuted in federal criminal courts.

Over the past fifteen years, the ATS has expanded from approximately 70 variables related to group affiliation, ideology, demographics, and legal and sentencing variables to over 400 variables that include information on the geospatial and temporal distribution of the pre-incident (or precursor) activities of these defendants leading up to a planned or completed terrorism incident. Older cases already in the ATS were revisited to collect data on additional variables.

Data for the Current Quantitative Analysis

At the time of the current project, the ATS was tracking 1,360 federal "terrorism-related" court cases involving 1,922 indictees. These court cases involved 563 failed, foiled, or completed terrorism incidents with 4,305 antecedent (precursor) activities identified during data collection and coding. However, many of the hypotheses that we proposed to test involved linking antecedents to specific incidents and required temporal data. These analyses required linking an antecedent act to all terrorism incidents that it was associated with from review of court documents and media articles. In addition, the temporal analyses required dates of both

antecedent activities and dates/planned dates of terrorism incidents in order to calculate the lengths of the planning cycles. Because of these methodological constraints, the sample size was reduced depending on the specific hypotheses being tested. Table 1 below demonstrates how this necessity reduced the amount of quantitative data available for analysis.

Table 1: Characteristics of the Temporal Data

<i><u>Data Type</u></i>	<i><u>No. of Antecedents</u></i>	<i><u>No. of Incidents</u></i>
Total Data in the ATS	4,305	563
Data with known Terrorism Category	4,269	550
Linked Antecedents and Incidents	3,989	404
Linked Preparatory Acts and Incidents	3,525	404
Date Stamped Preparatory Acts and Incidents	2,562	332
Number Analyzed	2,354	272

The database includes information on 3,989 precursor acts linked to 404 incidents, 3,525 of them were deemed to be “preparatory” to a specific terrorism incident. Antecedent or precursor acts that were not explicitly identified as part of the planning or preparation process were excluded from the analysis. These antecedent acts were recorded as “ancillary” – behaviors committed by the individuals that may have been related to “order maintenance” within the group, meetings that were not specifically related to the planning for a specific terror incident, or any other precursor activities that were not specifically identifiable as “preparatory.” The “ancillary” category is the default – if we were unable to positively identify that a specific precursor behavior was preparatory for a specific terrorism incident, it was recorded as “ancillary.” For example, the killing of a group member by other group members for talking too much about group activities to outsiders (e.g., the killing of Walter West by other Order

members in 1984) was coded as an “ancillary” precursor or antecedent behavior, but it was not preparatory to any specific terrorism incident and was, therefore, not included in the analysis.

It should also be noted that some of the preparatory behaviors are counted more than once if they were preparatory to multiple terrorism incidents. For example, if a robbery of explosives provided materials for three separate terrorism incidents, the robbery was counted three times if temporal measures were available on all three terrorism incidents. We were able to date stamp 2,354 of the 3,525 preparatory acts with both a date for the preparatory act and a date (or planned date) on 272 terrorism incidents in the United States from 1980 - October 1, 2016.⁵ Hypotheses requiring temporal data were limited to the 272 incidents. Other hypotheses utilized the full sample of incidents.

Since the unit of analysis is a “terrorism incident,” Table 2 provides a description of the incident data used in the analysis. Our individual cases were distributed among five broad, radical ideological categories – environmental, far-left, far-right, AQAM, and ISIS. Environmental and Far-right incidents constituted almost half (48%) of the sample of 550 terrorism incidents (23.3% and 24.7%, respectively). With the emergence of ISIS in 2013 following the decline of Al Qaeda in Iraq, we wanted to examine these two groups separately to determine if any patterns of behavior differed between the two groups. We were able to identify 48 plots involving ISIS affiliates in the United States from its inception through October 2016. Although many of these cases have not closed in federal courts, sufficient data were available to allow preliminary comparisons.

⁵ At the beginning of the project only 795 preparatory behaviors could be time stamped to provide a temporal measurement from the date of the preparatory act to the date of incident. During the course of the project temporal data was collected on an additional 1,767 measurements, bringing the total number of temporal measures between preparatory date and date of incident to 2,262 measurements.

Table 2: Characteristics of the Terrorism Incidents in the Sample

	N	%		
Group Type				
Far-left	80	14.5		
Environmental	128	23.3		
Far-right	136	24.7		
AQAM	81	14.7		
ISIS	48	8.7		
Other	<u>77</u>	<u>14.0</u>		
Total	550	100.0		
Success/Failure				
Success/Partial Success	318	57.8		
Unsuccessful	<u>232</u>	<u>42.2</u>		
Total	550	100.0		
Sophistication				
Most Sophisticated	170	32.6		
Moderately Sophisticated	70	13.4		
Least Sophisticated	<u>282</u>	<u>54.0</u>		
Total	522	100.0		
	Min	Max	Mean	Median
Planning Cycle	0	2438	309.6	108
Num. of Meetings	0	91	4.3	1
Num. of Preparatory Acts	0	35	6.26	3

We were able to ascertain a measure of success/failure on all 550 incidents in the sample. For comparative purposes, successful and partially successful incident categories were collapsed to create a dichotomous measure of successful or partially successful compared with incidents deemed to be unsuccessful (failed or foiled). These categories were well distributed (57.8% partially or fully successful, 42.2% unsuccessful). On one of our independent variables, “incident sophistication,” we were able to make broad categorizations relative to this issue on 522 of the 550 incidents.

Measures of three other independent variables (length of the planning cycle, number of meetings, and the number of preparatory acts per incident) are also summarized in Table 2. Both

means and medians are provided for these variables due to the variation in these two measures (mean values are substantially higher than the medians due to outliers in the three measures).

We have chosen to use the median values in much of the analysis since the median reveals the midpoint at which half of the activities occurred above or below this value. Finally, Table 3 below shows how the variables for each hypothesis were operationalized for this analysis.

Table 3: Operationalization of the Concepts and Variables Tested Quantitatively

Hypothesis Number	Variable Name	Independent/Dependent	Measurement/Coding Description
<i>Crime Specific Temporal Patterns and Group Type</i>			
1	Category	IV	Codes into five categories of terrorist group type: Far-Left, Far-Right, Environmental, AQAM, ISIS
1	Days Between	DV	Continuous variable that measures the days between a precursor behavior and terrorism incident
1	Antecedent Specific	IV	Codes antecedents into similar categories of behavior
<i>Factors Associated with the Number of Preparatory Behaviors</i>			
2, 3	Number of Offenders	IV	Measured using known estimates of number of offenders involved in the incident to indicate group size. Recoded into categories of 1 offender, 2-3 offenders, and 4 or more offenders
2, 4	Number of Preparatory Behaviors	DV	Continuous variable that codes the number of known preparatory behaviors linked to the terrorism incident. Recoded into categories of 0-2 activities, 3-5 activities, and 6 or more activities
3	Number of Meetings	DV	Continuous variable that codes the number of known preparatory meetings linked to the terrorism incident. Recoded into categories of 0, 1-3, and 4 or more
4	Sophistication	IV	Likert-type variable that recodes incident Weapon Type into three levels of sophistication: Least, Moderately, and Most Sophisticated
<i>Factors Associated with the Length of the Planning Cycle</i>			
5, 7	Number of Offenders	IV	Measured using known estimates of number of offenders involved in the incident to indicate group size. Recoded into categories of 1 offender, 2-3 offenders, and 4 or more offenders
5, 6	Plan Cycle	DV	Originally a continuous variable, limited to 1296 days, recoded into quartiles: 0–20 days, 21–95 days, 96–285 days, 286+ days to measure length of incident planning cycle
6, 7	Sophistication	IV(6)/DV (7)	Likert-type variable that recodes incident Weapon Type into three levels of sophistication: Least, Moderately, and Most Sophisticated

Table 3 Con't: Operationalization of the Concepts and Variables Tested Quantitatively

<i>Factors Associated with Terrorist Attack Success or Failure</i>			
8	Number of Preparatory Behaviors	IV	Continuous variable that codes the number of known preparatory behaviors linked to the terrorism incident. Recoded into categories of 0-2 activities, 3-5 activities, and 6 or more activities
8, 9, 10, 11	Success/Failure	DV	Dichotomous variable of unsuccessful and successful/partially successful incidents
9	Plan Cycle	IV	Originally a continuous variable, limited to 1296 days, recoded into quartiles: 0–20 days, 21–95 days, 96–285 days, 286+ days to measure length of incident planning cycle
10	Number of Offenders	IV	Measured using known estimates of number of offenders involved in the incident to indicate group size. Recoded into categories of 1 offender, 2-3 offenders, and 4 or more offenders
11	Sophistication	IV	Likert-type variable that recodes incident Weapon Type into three levels of sophistication: Least, Moderately, and Most Sophisticated

III. MAJOR FINDINGS

Terrorist Group-Specific Patterns

This section reviews key findings by describing terrorist group-specific patterns of preparatory activities, the nature of planning cycles and participation in terrorist preparations, and failures to successfully execute attacks. We hypothesize that crime specific temporal patterns of precursor conduct vary significantly by terrorist group type (Hypothesis 1). Shown in Table 4, our findings generally support our hypothesis, as significant differences are found across terrorist groups for all key factors except for the number of recorded meetings.

One way that terrorists differ is in the volume of preparatory activities. Table 4 shows that groups significantly vary in regards to the volume of preparatory behaviors that occur prior to terrorist incidents. In particular, far-left and Islamic jihadists (AQAM and ISIS) engaged in disproportionately more preparatory behaviors, as between 56 and 67 percent of incidents involve six or more preparatory activities. On the other hand, over 70 percent of incidents perpetrated by environmental terrorists involve two or less preparatory activities. Importantly,

though, these patterns do not necessarily hold for more specific preparatory behaviors as expected, including recorded meetings between offenders. As shown in Table 4, environmental terrorists tended to meet the least, though we fail to find significant differences across groups.

Table 4: Key Variables by Type of Terrorist Group

Variable	All	Far-Left	Environ-mental	Far-Right	AQAM	ISIS	Chi-Square p value
	%	%	%	%	%	%	
Number of Preparatory Acts (n=339)							.000
0-2	42.8	7.1	70.9	48.8	27.9	17.2	
3-5	19.8	26.2	12.8	24.0	16.4	20.7	
6+	37.5	66.7	16.3	27.3	55.7	62.1	
Number of Recorded Meetings (n=201)							.213
0	50.2	51.9	61.7	46.2	48.9	39.3	
1-3	25.4	25.9	29.8	25.0	23.4	21.4	
4+	24.4	22.2	8.5	28.8	27.7	39.3	
Length of Planning Cycle (n=273)							.000
0-20 days	26.0	7.3	50	21.7	7.1	29.0	
21-95 days	26.0	14.6	21.1	31.3	16.7	51.6	
96-285 days	23.8	22.0	18.4	24.1	38.1	19.4	
286+ days	24.2	56.1	10.5	22.9	38.1	0.0	
Number of Offenders (n=393)							.000
1	37.2	8.6	12.5	54.5	62.5	42.9	
2-3	40.2	51.4	54.5	28.1	29.2	45.2	
4+	22.6	40.0	33.0	17.4	8.3	11.9	
Sophistication (n=443)							.000
Least	38.1	1.3	96.0	28.2	7.9	18.6	
Moderately	14.9	6.6	0.0	21.8	21.1	41.9	
Most	47.0	92.1	4.0	50.0	71.1	39.5	
Incident Failure (n=464)							.000
Failed	41.8	23.8	21.6	40.3	75.3	75.0	
Successful	58.2	76.2	78.4	59.7	24.7	25.0	

In addition to environmental groups engaging in relatively fewer preparatory activities, they also spent shorter lengths of time planning their attacks. Indeed, 50 percent of environment terrorists planned their attacks in 20 or less days. Contrastingly, terrorists associated with far-left

and AQAM groups planned for much longer periods of time. Seventy-eight percent of left-wing terrorists and approximately 76 percent of AQAM terrorists planned for 96 days or longer. An interesting finding to note here is that ISIS terrorists appear to have planned their attacks for shorter time periods than AQAM terrorists. At the same time, ISIS terrorists engaged in proportionately more preparatory behaviors than their AQAM counterparts.

We also find significant differences across groups regarding the number of offenders involved in terrorist incidents. As shown in Table 4, both far-right and AQAM terrorists are proportionately more likely to operate as lone actors, whereas far-leftists and environmentalists preferred to operate within the context of small cells (2-3 offenders). Terrorists who pledged allegiance to ISIS were rarely connected to larger groups of offenders, as 43 percent operate alone and 45 percent operate in small cells.

Patterns of terrorist incident sophistication logically align with the nature of temporal sequencing and preparatory activity. That is, environmental terrorists who engaged in few preparatory acts and planned for only short periods of time generally selected the least sophisticated forms of weaponry and modes of attack. These attacks presumably required the least knowledge and preparation time. On the other hand, AQAM terrorists planned some of the most sophisticated incidents that, based on our results, required longer planning periods and much more preparation.

Finally, we examine how the likelihood of a terrorist incident failing compares across terrorist groups. Again, we find significant differences by group type. Terrorist incidents perpetrated by terrorists associated with AQAM and ISIS groups tended to fail significantly more, 75 percent of the time, than other types of terrorists. By contrast, far-right terrorists succeeded more than they failed (60% success rate), and far-left and environmental terrorists

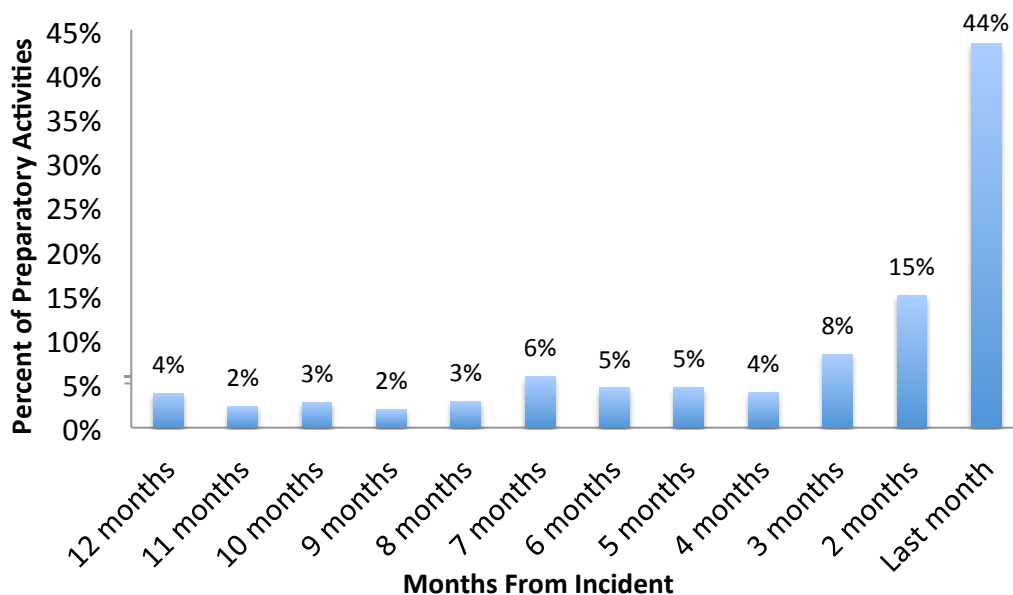
were by far the most successful of all terrorist groups, succeeding 76% and 78% of the time, respectively.

Crime Specific Analysis of Group Patterns

Although a number of strategies could be devised to examine variation in group type by crime type, we have chosen to present this material using three different approaches. First, a series of graphs are used to depict the temporal sequencing of crime types by group type. Second, we present similar data in a different format, examining where in the planning cycle different types of behaviors are most likely to occur. Finally, we present the most common *sequence of events* for each group type by type of preparatory activity.

All of the terrorist group types exhibited one common pattern regarding preparatory behaviors regardless of the length of the planning cycle. All five of the group types demonstrated a slight “bump” in activity about six months prior to an incident, followed by a steady increase in activity leading up to the incident. Figure 2 provides a summary of this pattern where the planning cycle is truncated to include only the year prior to the incident.

Figure 2: Percent of Preparatory Acts by Month



Overall, 44% of the preparatory acts occurred in the month immediately preceding the incident, 59% (44% + 15%) occurred within sixty days, and two-thirds (67%) occurred within ninety days of the planned incident. The typical planning cycle for terrorist incidents in the United States over the past thirty-five years began, on average, about six months prior to an incident, with a steady but small level of activity for about three months followed by an escalating volume of activity during the last ninety days prior to the incident.⁶

Table 5 provides a comparison of when particular types of preparatory behaviors most frequently occurred by group type. Overall, over one-half (55.9%) of the preparatory behaviors committed by terrorists in the United States occurred within 90 days of the planned incident. Substantial variation exists between groups, however. For example, environmental terrorists committed 44 percent of their preparatory acts within five days of the incident. In contrast, far-left terrorists had a substantially longer planning cycle than any other group type. Median values for the group types (not shown in Table), reveal that far-left terrorists committed half of their behaviors 276 days prior to the incident, compared to 11 days for environmental, 40 days for far-right, 73 days for AQAM, and 49 days for ISIS affiliates.

Table 5: Cumulative Percent of Preparatory Activities Prior to Incident

Category	3 + Years	1 – 3 years	6 mo - 1 year	3 – 6 months	1-3 months	11 – 30 days	6-10 days	2 - 5 days	Day Prior	Day of Incident	Total Acts
Environmental (70)		100%	96%	89%	84%	75%	50%	44%	24%	10%	231
Far-left (36)	100%	97%	62%	37%	25%	14%	8%	7%	4%	2%	442
Far-right (84)	100%	97%	88%	77%	68%	43%	24%	120%	11%	7%	420
AQAM (38)	100 %	98%	88%	66%	54%	34%	16%	11%	5%	4%	751
ISIS (30)		100%	91%	84%	71%	39%	20%	14%	5%	4%	274
Total	100%	98%	84%	67%	56%	36%	20%	16%	8%	5%	2118

⁶ Over 80% of all the known preparatory behaviors occurred within one year prior to the planned incidents.

Tables 6 through 13 reveal when particular types of preparatory behaviors occurred by group type. While a detailed discussion of these tables is not provided here, a few of the most significant findings warrant comment. Ten types of preparatory behaviors account for 2,335 of the 2,562 preparatory behaviors in the analysis. One type of behavior (material acquisition and storage) accounts for nearly one-third of these preparatory behaviors (743 of 2,335; 31.8%). The next most common types of preparatory behaviors are surveillance/reconnaissance (214, 9.2%), acquisition of expertise (169, 7.2%), weapons acquisition/storage (146, 6.3%), misrepresentation (132, 5.7%), recruitment (100, 4.3%), theft (95, 4.1%), and threats (90, 3.9%).

Table 6: Cumulative Percent of Materials Acquisition Prior to Incident

Category (Incidents)	3 + Years	1 – 3 years	6 mo. to 1 year	3 – 6 months	1 - 3 months	11 – 30 days	6-10 days	2 – 5 days	Day Prior	Day of Incident	Total Acts
Environmental (40)			100%	99%	96%		56%	53%			94
Far-left (31)	100%	98%	56%	42%	30%	20%	15%	11%	5%		98
Far-right (59)	100%	96%	87%	68%	59%	37%	20%	17%	6%	4%	162
AQAM (24)		100%	91%	74%	63%	39%	14%	9%	6%		266
ISIS (24)											56
Total	100%	99%	86%	73%	62%	44%	23%	18%	9%	4%	676

Table 7: Cumulative Percent of Weapons Acquisition Prior to Incident

Category (Incidents)	3 + Years	1 – 3 years	6 mo. to 1 year	3 – 6 months	1 - 3 months	11 – 30 days	6-10 days	2 – 5 days	Day Prior	Day of Incident	Total Acts
Environmental (3)			100%	67%	33%	33%	33%	33%	33%	33%	3
Far-left (2)									100%	0%	2
Far-right (10)		100%	88%	82%	76%	39%	24%	18%	9%	6%	33
AQAM (12)		100%	87%	60%	60%	60%	27%	20%	13%	13%	15
ISIS (18)		100%	95%	84%	66%	27%	5%	5%	2%	2%	62
Total		100%	92%	80%	68%	37%	16%	13%	8%	5%	115

Table 8: Cumulative Percent of Surveillance Prior to Incident

Category (Incidents)	3+ Years	1-3 years	6 mo. to 1 year	3-6 months	1-3 months	11-30 days	6-10 days	2-5 days	Day Prior	Day of Incident	Total Acts
Environmental (28)			100%	92%	87%	80%	80%	41%	13%	3%	39
Far-left (15)	100%	96%	61%	41%	37%	8%	4%	4%	0%	0%	49
Far-right (18)	100%	98%	93%	83%	80%	48%	33%	23%	13%	10%	40
AQAM (25)	100%	98%	97%	79%	50%	34%	15%	8%	2%	2%	62
ISIS (7)		100%	100%	100%	100%	82%	55%	27%	9%	9%	11
Total	100%	98%	88%	74%	63%	42%	25%	17%	6%	4%	201

Table 9: Cumulative Percent of Acquisition of Expertise Prior to Incident

Category (Incidents)	3+ Years	1-3 years	6 mo. to 1 year	3-6 months	1-3 months	11-30 days	6-10 days	2-5 days	Day Prior	Day of Incident	Total Acts
Environmental (8)			100%	78%	44%	33%	11%	0%	0%	0%	9
Far-left (16)		100%	41%	28%	24%	17%	10%	7%	7%	0%	29
Far-right (12)		100%	96%	87%	74%	39%	0%	0%	0%	0%	23
AQAM (19)	100%	91%	75%	46%	34%	18%	5%	0%	0%	0%	67
ISIS (16)		100%	85%	80%	63%	38%	25%	15%	5%	0%	40
Total	100%	96%	76%	58%	45%	26%	10%	5%	2%	0%	168

Table 10: Cumulative Percent of Misrepresentation Prior to Incident

Category (Incidents)	3+ Years	1-3 years	6 mo. to 1 year	3-6 months	1-3 months	11-30 days	6-10 days	2-5 days	Day Prior	Day of Incident	Total Acts
Environmental (3)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
Far-left (2)	0%	100%	51%	30%	17%	7%	3%	1%	1%	1%	70
Far-right (10)	0%	100%	86%	43%	43%	43%	0%	0%	0%	0%	7
AQAM (12)	0%	100%	93%	96%	98%	68%	41%	32%	5%	2%	44
ISIS (18)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
Total		100%	70%	55%	48%	31%	17%	12%	3%	2%	121

Table 11: Cumulative Percent of Recruitment Prior to Incident

Category (Incidents)	3 + Years	1 – 3 years	6 mo. to 1 year	3 – 6 months	1 - 3 months	11 – 30 days	6-10 days	2 – 5 days	Day Prior	Day of Incident	Total Acts
Environmental (27)		100%	73%	63%	57%	40%	37%	27%	13%	0%	30
Far-left (12)	100%	93%	39%	11%	4%	0%	0%	0%	0%	0%	28
Far-right (4)				100%	60%	40%	40%	20%	20%	20%	5
AQAM (10)		100%	72%	33%	28%	5.6%	0%	0%	0%	0%	18
ISIS (8)				100%	92%	23%	8%	8%	0%	0%	13
Total	100%	98%	68%	49%	40%	19%	15%	11%	5%	1%	94

Table 12: Cumulative Percent of Theft Prior to Incident

Category (Incidents)	3 + Years	1 – 3 years	6 mo. to 1 year	3 – 6 months	1 - 3 months	11 – 30 days	6-10 days	2 – 5 days	Day Prior	Day of Incident	Total Acts
Environmental (2)					100%	50%	50%	50%	0%	0%	2
Far-left (17)	100%	90%	67%	22%	13%	13%	0%	0%	0%	0%	63
Far-right (11)		100%	97%	97%	90%	62%	17%	17%	3%	0%	29
AQAM (1)									100%	0%	1
ISIS (0)	-	-	-	-	-	-	-	-	-	-	0
Total	100%	94%	77%	47%	39%	21%	7%	7%	2%	0%	95

Table 13: Cumulative Percent of Threats Prior to Incident

Category (Incidents)	3 + Years	1 – 3 years	6 mo. to 1 year	3 – 6 months	1 - 3 months	11 – 30 days	6-10 days	2 – 5 days	Day Prior	Day of Incident	Total Acts
Environmental (8)		100%	88%	63%	38%	13%	0%	0%	0%	0%	8
Far-left (6)		100%	88%	75%	75%	75%	75%	75%	75%	75%	8
Far-right (18)	100%	84%	56%	52%	44%	16%	4%	4%	4%	0%	25
AQAM (14)	100%	77%	65%	53%	39%	30%	24%	18%	12%	12%	34
ISIS (8)				100%	80%	30%	30%	30%	30%	30%	10
Total	100%	86%	71%	61%	48%	28%	21%	19%	17%	15%	85

Although a number of differences in these groups appear, a few are quite noticeable. First, “misrepresentation” -- typically the use of false identification or forged documents – is limited almost exclusively to far-left and AQAM affiliates. Far-right, environmental, and ISIS affiliates seldom or never used this tactic, while the far-left and AQAM adherents utilized this tactic numerous times (70 and 44 times, respectively). Second, while the recruitment period varies considerably by group, ISIS affiliates recruited almost exclusively within a relatively short window -- 30 to 90 days prior to the planned incident. Third, ISIS affiliates account for over one-half of the efforts to acquire weapons prior to a planned incident. The overwhelming majority of these efforts occurred between four months and ten days prior to the planned incident. Finally, although surveillance and reconnaissance of a proposed target was common for all group types, the groups varied extensively regarding when reconnaissance activities occurred. One half of AQAM reconnaissance efforts, for example, occurred three months prior to the proposed incident data. In contrast, ISIS affiliates waited much longer – over half of their reconnaissance activities occurred within ten days of the planned incident.

Table 14 below shows the distribution of preparatory behaviors in a slightly different way. Perhaps the most illustrative way to show these patterns of preparatory behavior, however, is to sequence them by group type. Eight different types of precursor activities occurred among the six most common activities across all five group types. These eight categories of behaviors accounted for 1,689 of the 2,118 precursor behaviors that could be time-stamped. These behaviors are then sequenced based on the median distances for each type of behavior from the date of the projected or completed terrorist incident. In other words, one-half of the behaviors occur farther in time from the incident and one-half occurred closer in time to the incident.

Table 14: Cumulative Percent of All Activities Prior to Incident

Category (Incidents)	3 + Years	1 – 3 years	6 mo - 1 year	3 – 6 months	1-3 months	11 – 30 days	6-10 days	2 - 5 days	Day Prior	Day of Incident	Total Acts
All Preparatory (272)	100%	98%	84%	67%	56%	36%	20%	16%	8%	5%	2118
Materials Acquisition (192)	100%	99%	86%	73%	62%	44%	23%	18%	9%	4%	676
Weapons Acquisition (49)		100%	92%	80%	68%	37%	16%	13%	8%	5%	115
Surveillance (96)	100%	98%	88%	74%	63%	42%	25%	17%	6%	4%	201
Expertise Acquisition (72)	100%	96%	76%	58%	45%	26%	10%	9%	2%	0%	168
Misrepresentation (24)		100%	70%	55%	48%	31%	17%	12%	3%	2%	121
Recruitment (66)	100%	98%	68%	49%	40%	19%	15%	11%	5%	1%	94
Theft (31)	100%	94%	77%	47%	39%	21%	7%	7%	2%	0%	95
Threats (55)	100%	86%	71%	61%	48%	28%	21%	19%	17%	15%	85

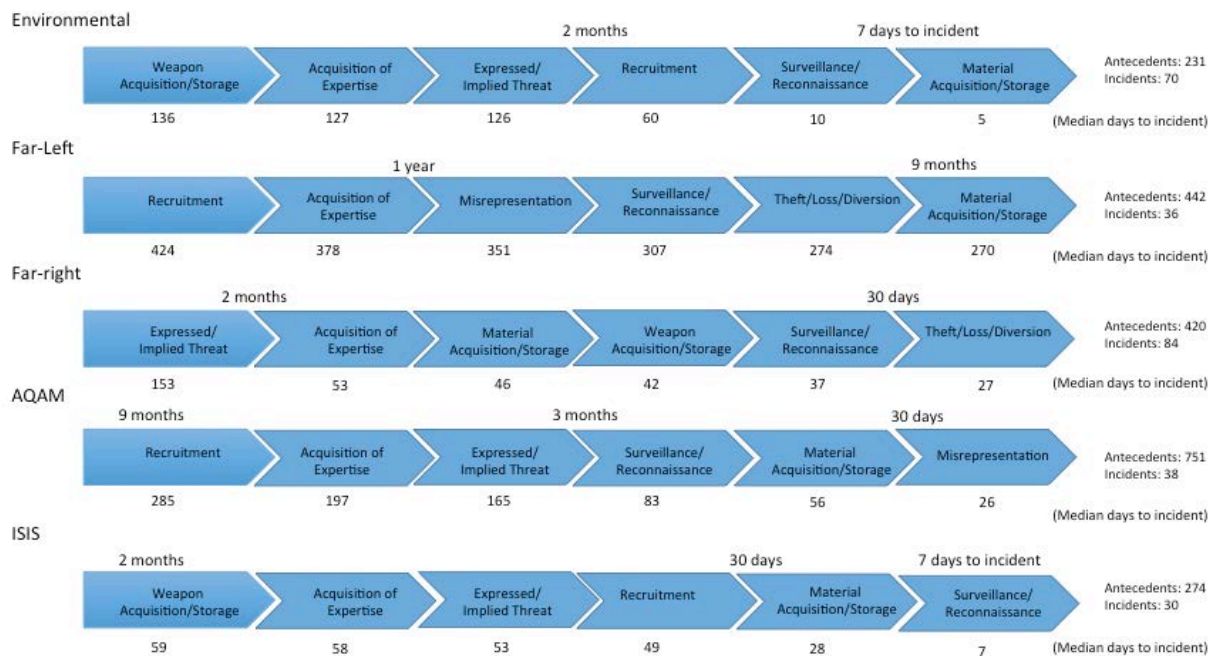
Overall, the most commonly occurring precursor activities involve the acquisition and storage of materials used in the planned terrorist attack (n=743). Recruitment occurs earliest among these eight types of behaviors (median of 225 days), while surveillance and reconnaissance occurs, on average, closest to the target date (median of 43 days). These results are shown in Figure 3.

Figure 3: Most common preparatory behaviors by median days to incident.



Table 15 below shows the six most common preparatory activities by group type, encompassing all of the eight categories of behaviors shown in Figure 3 above.⁷ The most notable feature in Table 15 involves the behavior of ISIS affiliates. Although environmental terrorists commit over half of all their preparatory behaviors within ten days of the terrorist incident, the medians for some of the particular types of behaviors fall well beyond this range.

Table 15: Median days of Preparatory Activities prior to Incident by Category



In contrast, as Table 14 demonstrated previously, at least one-half of all of the major varieties of preparatory conduct committed by ISIS adherents occurs within 59 days of the terrorist incident. No other group type comes close to matching this level of diverse activity within such a short period of time. The proximity of at least four of these median values for ISIS (49, 53, 58, and 59 days) suggests a pattern of potentially disorganized activity culminating in

⁷ It should be noted that our coding of preparatory behaviors is reflective of the sixteen categories of reporting used in the SARs initiative.

reconnaissance on the proposed target. No other group type waited as late, on average, to gather intelligence on a prospective target.

Other than substantial variation by group type in the length of the planning process, Table 15 reveals remarkable consistency across groups regarding the general sequence of preparatory activity. The acquisition of expertise early in the planning process, frequently through online research, is a common theme among all of the groups' preparatory activities. Second, issuing threatening communications was also an early behavior common to four of the five group types. Threatening communications are absent as one of the most six common precursor activities in only one group type – the far-left. Third, surveillance or reconnaissance of the target was among the last three types of activities engaged in by all five group types. On average, four of the five group types engaged in reconnaissance no longer than three months prior to the incident. For ISIS and environmental plots, these behaviors occurred, on average, a week to ten days prior to the incident.

Fourth, the acquisition and/or storage of materials needed for commission of the incident typically occurred very late in the planning process. For four of the five group types, the acquisition or storage of materials occurred, on average, later than almost all other types of preparatory behaviors. Only the far-right deviated from this pattern. However, the far-right, unlike any other group, engaged in theft as one of the six most common precursor activities. Since these thefts involved the acquisition of materials for the commission of the incident (i.e., they are categorized as preparatory to the incident), then this pattern would indeed have been common to all groups. It appears that the behavior most common to all terrorist group types, and the one behavioral type that signals that an attack is imminent, is the acquisition, manufacture, and storage of bomb-making materials or other components.

Volume of Terrorist Preparatory Activities

We next turn to an examination of two key elements of terrorist opportunity, number of offenders and incident sophistication, and how each correlates with the volume of preparatory activities engaged in by terrorists. We hypothesized (Hypothesis 2) that terrorist incidents with more offenders involved in the planning of incidents, and in some instances the execution of attacks, are associated with larger volumes of precursor activities. Our findings support this hypothesis, revealing significant ($p \leq .05$) differences between single actor incidents and incidents perpetrated by multiple offenders (see Table 16). Only 27 percent of single actor incidents involve six or more preparatory activities, while 44 percent of incidents by small cells and nearly 52 percent of incidents perpetrated by groups of four or more involve this many preparatory activities.

Table 16: The Relationship Between Group Size, Incident Sophistication and Volume of Preparatory Behaviors

Variable	Number of Preparatory Acts			Chi- Square p value	Number of Recorded Meetings			Chi- Square p value
	0-2 %	3-5 %	6+ %		0 %	1-3 %	4+ %	
Number of Offenders (n=342)				.002				
1	53.5	19.7	26.8		70.7	15.2	14.1	.000
2-3	38.3	17.4	44.3		26.2	37.7	36.1	
4+	32.9	15.3	51.8		37.3	31.4	31.4	
Sophistication (n=350)				.000				
Least	66.4	18.4	15.2					
Moderately	41.4	25.9	32.8					
Most	26.3	7.4	56.3					

We also expect that terrorist planning involving more offenders results in a relatively higher number of recorded meetings associated with terrorist incidents (Hypothesis 3). We focus

on this particular preparatory behavior because we suspect that it presents more opportunities for intervention by law enforcement and the public more generally. Our findings partially support our hypothesis, as incidents involving more than one offender are associated with significantly ($p \leq .000$) more meetings than single actor incidents. In fact, no meetings are identified for 71 percent of single actor incidents (see right side of Table 16). For the other 29 percent of single actor incidents, offenders either met with undercover law enforcement or other individuals who were unwittingly involved in the preparatory process. However, the interpretation of statistical difference between incidents involving small cells and larger groups is somewhat muddled, running counter to our hypothesis. While approximately 74 percent of incidents perpetrated by 2 to 3 offenders involved 1 or more recorded meetings, only 63 percent of incidents involving 4 or more offenders involved 1 or more recorded meetings.

Incident Sophistication

Terrorist incidents involving the use of sophisticated weaponry and modes of attack entail the need for advanced skills, knowledge and levels of preparation. For this reason, we hypothesize (Hypothesis 4) that increasingly sophisticated planned incidents involve a greater number of precursor activities. Supporting our hypothesis, we find that more sophisticated incidents, or those involving biological weapons, projectile weapons, and aircraft, are significantly ($p \leq .05$) more likely to involve an elevated number of preparatory activities than less sophisticated incidents, such as those involving blunt objects or bodily weapons. As shown in Table 16, while only 15 percent of the least sophisticated incidents are associated with six or more preparatory activities, 56 percent of the most sophisticated planned and executed incidents involve this many preparatory activities.

Considering both patterns of preparatory activities and incident sophistication, our findings generally support our expectations. Bivariate analyses reveal that the volume of preparatory activities significantly correlates with the number of offenders involved in an incident and the sophistication of the planned attack. Demonstrated in Table 4 earlier, incidents perpetrated by left-wing terrorists most strikingly reflect these overall patterns, as they engage in the most preparatory activities, operate with the most co-conspirators, and plan the most sophisticated attacks. Less clear, however, is why certain types of preparatory behaviors, specifically meetings, occur less frequently for incidents involving the most offenders. Looking more in-depth at group-specific preparatory and participatory findings may help to elucidate these findings. In particular, Table 4 reveals that the curious relationship between meetings and number of offenders is being largely influenced by environmental incidents. Nearly 88 percent of environmental incidents are perpetrated by multiple offenders, but approximately 62 percent of these incidents involved two or less meetings. The lesson here for law enforcement and intelligence officials is that more offenders participating in the planning of incident does not necessarily equate to increased opportunities to intercept face-to-face meetings between co-conspirators. Instead, such opportunities are often group-specific.

Temporal Patterns of Planning Cycles

In addition to the volume of preparatory behaviors, we are interested in if, and how, the number of offenders and the sophistication of terrorist incidents correlate with the length of terrorist planning cycles. We hypothesize (Hypothesis 5) that terrorist incidents perpetrated by relatively more offenders involve longer planning processes. Though significant ($p \leq .01$) differences in the length of planning cycles by the size of offender groupings are evident, overall patterns are not entirely supportive of our hypothesis (see Table 17). For instance, while most

incidents perpetrated by single actors involved planning cycles of 21 to 95 days, the majority of incidents perpetrated by small cells of two to three offenders were planned for 20 or less days. We also found that the percentage of incidents for which planning processes lasted for more than 286 days proportionately increases as the number offenders involved in a terrorist incident increases, in part supporting our hypothesis.

Table 17: The Relationships Between Group Size, Incident Sophistication and Length of Terrorist Planning Cycles

Variable	Length of Planning Cycle				Chi-Square p value
	0-20 days %	21-95 days %	96-285 days %	286+ days %	
Number of Offenders (n=279)					.006
1	18.6	37.1	21.6	22.7	
2-3	31.4	22.5	19.6	26.5	
4+	22.5	13.8	32.5	31.3	
Sophistication (n=292)					.000
Least	49.1	21.8	20.0	9.1	
Moderately	20.8	41.7	14.6	22.9	
Most	6.0	21.6	31.3	41.0	

Sophistication of Planned Incident and Length of Planning Cycle

We also expected that more sophisticated incidents entail longer planning processes (Hypothesis 6). Again, we found significant ($p \leq .000$) differences across temporal categories, and patterns are more discernable. We can see from Table 17 that the percentage of incidents enduring elongated planning cycles increases as sophistication levels increase. The modal temporal categories for the least sophisticated incidents were 20 days or less, 21 to 95 days for moderately sophisticated incidents, and 286 or more days for the most sophisticated terrorist incidents. Relatively few of the least and moderately sophisticated terrorist incidents, between approximately 9 and 23 percent, took more than 286 days.

We hesitate to conclude that terrorist incidents involving more offenders usually take longer to plan. Indeed, over 40 percent of incidents involving four or more offenders had a planning cycle of less than 96 days. Again, environmental terrorist incidents seems to heavily influence these findings. Considering that environmental terrorists tend to engage in simple attacks with little preparation, it is unsurprising that they spend so little time preparing. In fact, in 50 percent of environmental attacks, terrorists planned 20 or less days, while less than 11 percent planned for more than 286 days. More convincing patterns are uncovered for sophistication, with planning cycles generally increasing along with sophistication levels. Therefore, we can conclude with some confidence that terrorist incidents involving elevated levels of coordination among multiple offenders and the use of advanced forms of weaponry are associated with more extended planning processes. As shown previously in Table 4, this is especially the case for far-left and AQAM incidents. While left-wing attacks in America may be less uncommon today, our findings also reveal that over 76 percent of more common AQAM incidents extend longer than 95 days and over 71 percent of these incidents are considered the most complex. In other words, AQAM incidents may provide relatively more opportunities for law enforcement, intelligence officials, and the public to observe suspicious and criminal activities prior to the successful execution of terrorist attacks.

Group Size and Sophistication of Planned Incident

The size of terrorist conspiracies may not only affect how long they plan and the volume of activities engaged in, but the types of weapons and modes of attack selected by terrorists as well. Therefore, we expect to find that terrorist incidents involving relatively more offenders rely on more sophisticated forms of weapons or modes of attack (Hypothesis 7).

Our analysis uncovered significant ($p \leq .000$) differences in the level of incident sophistication dependent on the number of terrorist offenders involved, generally supporting our hypothesis (see Figure 4 and Table 18). Interestingly, regardless of the number of offenders involved in a terrorist incident, we find that more than half of terrorist incidents involved the most sophisticated types of weapons or modes of attack (e.g., biological weapons, projectile weapons, and aircraft). Nonetheless, there are differences, as incidents involving the most terrorist conspirators (4 or more) are proportionately (71%) more likely to involve the most sophisticated weaponry and modes of attack in comparison to incidents perpetrated by fewer offenders.

Figure 4: The Relationship Between Group Size and Incident Sophistication

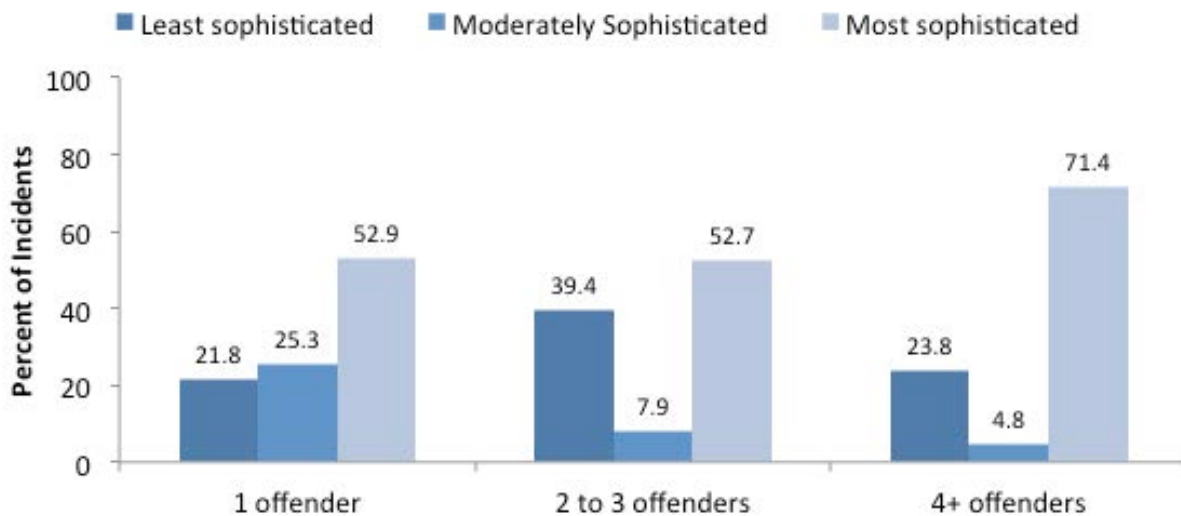


Table 18: The Relationship Between Group Size and Incident Sophistication

Group Size	Least Sophisticated	Moderately Sophisticated	Most Sophisticated	Chi-square
	%	%	%	p value
Number of Offenders (n=461)				.000
1 offender	21.8	25.3	52.9	
2 to 3 offenders	39.4	7.9	52.7	
4+ offenders	23.8	4.8	71.4	

It appears that larger terrorist conspiracies, in addition to taking longer to plan attacks and engaging in more preparatory activities, are associated with some of the most sophisticated of incidents. It is possible that with more offenders and opportunities for interaction among confederates stems from increased opportunities and determination to incorporate complicated, and especially lethal, weapons. On the flipside, it could also be that early planning decisions to utilize sophisticated weapons and modes of attack necessitate the recruitment of confederates with particular expertise.

Terrorist Attack Failure

A series of hypotheses centering on factors associated with the probability terrorist incidents will fail are also tested. Another way of thinking about this is whether certain aspects of terrorist opportunity are more or less associated with law enforcement and other types of intervention that lead to incident failure.

Table 19. The Relationship Between Preparatory Behaviors, Planning Cycles, Group Size, Incident Sophistication and Incident Failure

Variable	Successful %	Failed %	Chi-Square p value
Number of Preparatory Acts (n=372)			.000
0-2	68.5	31.5	
3-5	57.7	42.3	
6+	27.9	72.1	
Length of Planning Cycle (n=299)			.001
0-20 days	75.7	24.3	
21-95 days	49.3	50.7	
96-285 days	47.9	52.1	
286+ days	46.8	53.2	
Number of Offenders (n=477)			.050
1	51.4	48.6	
2-3	53.6	46.4	
4+	64.8	35.2	
Sophistication (n=522)			.000
Least	79.4	20.6	
Moderately	47.1	52.9	
Most	50.7	49.3	

Number of Preparatory Behaviors and Probability of Attack Failure

We begin this portion of our analysis by hypothesizing that the greater the number of terrorist precursor activities, the greater the probability that incidents end in failure (Hypothesis 8). Supporting our hypothesis, our analysis reveals that terrorist incidents preceded by two or less preparatory activities are the least likely to fail (see Table 19). Much different are those incidents involving more preparatory activities, which are significantly ($p \leq .000$) more likely to fail. In fact, approximately 72 percent of incidents with the greatest number of associated preparatory activities (6 or more) are considered failed attacks.

Length of Planning Cycle and Probability of Attack Failure

We also expect longer planning processes to increase the probability of failure (Hypothesis 9). Our expectations are confirmed, as terrorist incidents planned for 0 to 20 days (24%) are proportionately less like fail than succeed in comparison to incidents involving longer planning cycles. In other words, shorter planning cycles are relatively more associated with terrorists successfully carrying out their attacks than failing. As shown in Table 19, almost as many terrorist incidents with longer planning cycles fail as are successful.

Group Size and Probability of Attack Failure

Additionally, we hypothesize that terrorist incidents with greater numbers of participants are more likely to end in failure (Hypothesis 10). Our findings, as shown in Table 19, do not support our expectations. In fact, contrary to our hypothesis, higher rates of failure are significantly ($p \leq .050$) associated with fewer persons involved in the preparation process. More specifically, only 35 percent of terrorist incidents involving 4 or more terrorist participants are unsuccessful compared to incidents with 2 or 3 participants (46%) and single actors (49%).

Sophistication of Planned Incident and Probability of Attack Failure

Finally, we expect that more “sophisticated” planned incidents are increasingly likely to fail (Hypothesis 11). Table 19 shows statistically significant ($p \leq .000$) differences in attack failure across levels of incident sophistication. Supporting our hypothesis regarding the relationship between incident sophistication and incident failure, more complicated forms of weaponry and modes of attack are more associated with incident failure. The most substantial differences in attack failure exist between the least sophisticated incidents and those that are moderately and most sophisticated. Only 21 percent of the least sophisticated incidents failed. In contrast, between 49 and 52 percent of more sophisticated incidents failed.

In sum, three out of the four hypotheses regarding factors that are potentially correlated with terrorist outcomes are supported by our findings. Terrorist incidents involving longer planning periods, more preparatory activities, and more sophisticated forms of attacks are significantly more likely to be unsuccessful due to law enforcement intervention or some other form of failure. These findings seem to suggest that terrorists fail more often when planning cycles are elongated, they engage in multiple preparatory activities, and when weaponry and modes of attack require advanced training, skills, and equipment. As shown in Table 19, not all terrorist groups fail at the same rate. Those with the highest percentages of failure are terrorists associated with ISIS and AQAM groups whose incidents end in failure in three out of four planned attacks. Also, the majorities of terrorists associated with these groups engage in relatively more preparatory acts, but ISIS terrorists engage in shorter planned and less sophisticated attacks than AQAM terrorists.

We fail to find that larger terrorist conspiracies are more likely to end in failure, suggesting that lone actors and small cells may not be as successful as commonly believed.

Terrorists who received assistance in preparing for incidents have greater success than those who act on their volition. Success rates increase with the addition of more participants, though of course there may be a threshold where additional members become a detriment to success. One explanation is that incidents involving fewer participants require lone actors to commit all preparatory activities by themselves, while incidents perpetrated by multiple conspirators allow preparatory activities to be committed by several persons, effectively diluting the possibility that precursor conduct comes to the attention of law enforcement. Again, though, these patterns vary by terrorist group. Left-wing and environmental terrorists operate within the context of small cells most of the time and are very successfully in carrying out their attacks, as approximately 76 percent of far-left incidents and 78 percent of environmental incidents are successful (see Table 4). In contrast, AQAM incidents are perpetrated by solo actors and fail 75 percent of the time.

IV. IMPLICATIONS FOR POLICY AND PRACTICE

Decision-making by personnel involved in the investigation and prosecution of individuals or groups plotting terrorist events in the United States is based to a large extent on probabilities. When law enforcement personnel become aware of a terrorist plot, investigators and prosecutors must ask themselves a number of questions. How much time do we have before this group plans to commit its act of terror? How far along are the terrorists in the planning process? Do we have enough time to infiltrate the group with informants or operatives? Can we allow the plot to continue for a while longer so that additional evidence can be collected or should we intervene immediately? Until now, each of these questions involved making a decision based on an estimate derived from the investigator's intuition, prior experience on similar cases, or some physical evidence that revealed a projected target date (see Dyson, 2001

for an extensive discussion of varieties of investigative techniques and the difficulties associated with each).

The research conducted during this project was intended to help investigators and prosecutors make more educated “guesses” regarding the answers to the questions posed above. Although terrorist tactics evolve over time, our findings provide a definitive temporal record of previous terrorist plots in the United States. For investigators, fusion center analysts, and federal prosecutors, knowing how much “lead time” one has before an incident occurs is critical to making any decision regarding intervention. Our findings may be used to help guide those decisions. For example, if a suspicious act involving surveillance of a particular critical infrastructure is reported to a fusion center, a much more informed decision regarding the appropriate type of investigative technique or intervention strategy can be made. In the example above, if investigators have a general knowledge of the type of group that might be involved, knowing that *surveillance/reconnaissance* occurs fairly late in the planning process provides a foundation for counterterrorism intervention and prosecutorial decision-making.

Equally as important, the temporal sequencing identified in our results also provide investigators with a clue regarding the types of behaviors that have *already occurred* and which types of behaviors are most likely to *occur next*. Using the example of surveillance/reconnaissance provided earlier, once this type of behavior occurs, recruitment and acquisition of expertise have most likely already taken place, while the acquisition and storage of materials used in the planned terrorist attack are most likely occurring simultaneous to the surveillance or will follow shortly after. Knowledge of the general patterns of terrorists’ sequenced behaviors increases the probability that resources can be allocated to the correct type

of investigative and/or security efforts. Our findings alert law enforcement personnel to the necessity of early intervention when particular types of behaviors by terrorists occur.

Finally, we identified a number of areas where investigative and counterterrorism efforts must be strengthened. Terrorists who adopted a short planning cycle, committed fewer known preparatory behaviors, and those who opted to conduct less “sophisticated” terrorist operations had significantly greater success than terrorists who chose alternative strategies. Although we have learned a great deal about terrorists’ tactics and strategies, they have also learned what works and what does not. ISIS affiliates, perceived by many to be the greatest current threat to domestic security, appear to have adopted precisely the strategies listed above that have higher success rates. Despite this, intervention efforts against ISIS plots have been relatively effective. ISIS plots have been less successful than plots by other types of terrorist groups and no more successful than their AQAM predecessors. However, these patterns of behavior are probably not static and require continuous monitoring.

Scholarly Products

Smith, B. L., K. D. Damphousse, and J. Gruenewald. *Patterns of American Terrorism*. New York: Routledge Press. Forthcoming, 2018.

Fitzpatrick, K., Gruenewald, J., Smith, B.L., & Robert, P. (In Press). A community-level comparison of terrorism movements in the United States. Forthcoming in *Studies in Conflict & Terrorism*.

Klein, B.R., Gruenewald, J., & Smith, B.L. (In Press). Opportunity, group structure, temporal patterns, and successful outcomes of far-right terrorism incidents in the United States. Forthcoming in *Crime & Delinquency*.

Smith, B.L., Gruenewald, J., Klein, B., Ratcliff, K., Jackson, S., Brecht, I. Temporal Sequencing, Incident Sophistication, and Terrorist Outcomes.” College Park, MD: START, 2016.
https://www.start.umd.edu/pubs/START_CSTAB_ATS_TemporalSequencingIncidentSophisticationTerroristOutcomes_Sept2016.pdf

Jackson, S. and C. A. Shields. "ISIS in American Courts," Paper presented at the annual meeting of the American Society of Criminology. November 15-19, 2016. New Orleans, LA.

Brecht, I. D., and C. A. Shield. 2016. "Examining material support cases and their linkage to violent plots." Paper presented at the annual meeting of the American Society of Criminology Conference. November 15th - 19th. New Orleans, LA.

Ratcliff, K. and C. A. Shields. "Examining Terrorist Pre-Incident Affirmation Behaviors." Paper presented at the annual meeting of the American Society of Criminology. November 15-19, 2016, New Orleans, LA.

Klein, B.R., Gruenewald, J., Smith, B. "The Temporal Distribution of Learning Processes Across Domestic Terrorist Movements." Presentation for the Academy of Criminal Justice Sciences. Orlando, FL. March 4, 2015.

Smith, Brent, Paxton Roberts, Jeff Gruenewald, and Brent Klein. "Patterns of Lone Actor Terrorism in the United States." Presentation to Annual DHS/START Research Meeting, October 29, 2014. Subsequently published as a Research Brief, National Consortium for the Study of Terrorism and Responses to Terrorism, DHS.

Klein, B., Gruenewald, J., & Smith, B.L. "An examination of domestic terrorist attack characteristics and successful outcomes." Paper presented at the Academy of Criminal Justice Sciences Conference. Philadelphia, PA. February 20, 2014.

Brooks, Andy, Casey Harris, and Jeff Gruenewald. 2014. "Policing and the Likelihood of Terrorism: A Community-Structural Approach to an Uncertain Relationship." American Society of Criminology Annual Meeting. San Francisco, CA.

REFERENCES

- Damphousse, Kelly, and Brent Smith. 2004. "Terrorism and Empirical Testing: Using Indictment Data to Assess Changes in Terrorist Conduct." In (Mathieu Deflem, ed.), *Terrorism and Counterterrorism: Criminological Perspectives*. Philadelphia, PA: Elsevier Science.
- Dyson, William. 2001. *Terrorism: An Investigator's Handbook*. Cincinnati, OH: Anderson Publishing.
- Federal Bureau of Investigation, 1998. *Terrorism in the United States, 1997*. Washington, DC: U.S. Government Printing Office.
- Klein, Brent, Jeffrey Gruenewald, and Brent Smith. 2016. "Opportunity Structure, Temporal Patterns, and Successful Outcomes of Far-Right Terrorism Incidents in the United States." *Crime & Delinquency*. First published on June 26, 2016 as doi:10.1177/0011128716654925.
- Martinez, Thomas. 1988. *Brotherhood of Murder*. New York: McGraw-Hill.
- Smith, Brent L., Jeffrey Gruenewald, Paxton Roberts, and Kelly Damphousse. 2015. "The Emergence of Lone Wolf Terrorism: Patterns of Behavior and Implications for Intervention," in Mathieu Deflem (ed.) *Terrorism and Counterterrorism Today* (Sociology of Crime, Law and Deviance, Volume 20) Emerald Group Publishing Limited, pp. 89 – 110.
- Smith, Brent L., Kelly Damphousse, and Paxton Roberts. 2016. Forthcoming in G. LaFree and J. Freilich's (eds.) *The Handbook of the Criminology of Terrorism*. John Wiley & Sons, Hoboken, NJ.
- Smith, Brent L. 1994. *Terrorism in America: Pipe Bombs and Pipe Dreams*. Albany, NY: State University of New York Press.
- Smith, Brent L. 2006. "The American Terrorism Study: Structure, Use, and Findings." NIJ Research and Evaluation Conference, Washington, DC, July 19.
- Smith, Brent L. and Kelly R. Damphousse. 1996. "Punishing Political Offenders: The Effect of Political Motive on Federal Sentencing Decisions." *Criminology*. 34(3): 289-322.
- Smith, Brent L., David Snow, Kevin Fitzpatrick, Kelly R. Damphousse, and Paxton Roberts. 2016. "Identity and Framing Theory, Precursor Activity, and the Radicalization Process." Final Report to the National Institute of Justice for award # 2012-ZA-BX-0003.