PRIME
Preventing, Interdicting and Mitigating Extremism

D5.3
Lone Actor Attack Data Inventory
Public Version

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This research was funded by EC Grant Agreement n. 608354 (PRIME) FP7-SEC-2013-1. The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this study. Neither the Commission nor any person acting on the Commission's behalf may be held responsible for the use which may be made of the information contained therein.

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Keyword list

Lone actor terrorism; data; methodology; run-over attacks; stabbings; description; Israel; analysis; inventory

Definitions and acronyms

Acronyms	Definitions
DNI	Data Needs Inventory
HUJI	Hebrew University of Jerusalem, Israel
LAE	Lone Actor Extremist
LAEE	Lone Actor Extremist Events
UCL	University College London

1. Introduction

1.1 Context

PReventing, Interdicting and Mitigating Extremist events (PRIME) is a collaborative research project funded under the European Union's Seventh Framework Programme (FP7). PRIME started on 1 May 2014 and is slated to run for 36 months.

PRIME sets out to improve our understanding of lone actor terrorism and to inform the design of social and physical countermeasures for the prevention of lone-actor radicalisation, the disruption of lone-actor terrorist plots, and the mitigation of terrorist attacks carried out by lone extremists. PRIME's research activities involve a range of social scientific research methodologies, for the purpose of collecting empirical data needed to produce scripts (meta-script and sub-scripts) of lone-actor extremist events (LAEEs). The ultimate aim of the scripts so-produced is to enable the identification of 'pinch points', where interventions (i.e. countermeasures) can be implemented to prevent, disrupt or mitigate lone-actor terrorist activity.

PRIME seeks to go beyond the state of the art in the study of lone-actor extremism in a number of ways: first, by modelling factors, processes and indicators associated with LAEEs at several levels of analysis – individual, situational, social ecological and systemic – and, secondly, by developing for this purpose a more rigorous scripting methodology than has heretofore been used in the terrorism domain specifically, or in the field of crime analysis more generally. To achieve these objectives, PRIME's research activities must include the collection of suitable data.

As described in Deliverables 3.1 ("Risk Analysis Framework"; RAF) and 3.2 ("Data Needs Inventory"; DNI), the PRIME project is guided by a Risk Analysis Framework (RAF Matrix, see Figure 1 below) that divides the pre-attack process into three phases: 'radicalization', 'attack preparation' and the 'attack' itself. The responsibility for collecting data relevant to each of these phases has been allocated to different partners within the PRIME consortium, with the ultimate aim of combining their work into an integrated script analysis of a LAEE. Within this broader effort, the Hebrew University of Jerusalem, Israel (HUJI) team is responsible for the attack data collection and subscript, and any additional analytical products relevant to the attack phase.

As Figure 1 illustrates, while all the aforementioned levels of analysis are relevant to the three phases involved in LAEEs, their relative importance is expected to vary depending on the phase being studied. With regards to the attack phase, the 'individual' and 'situational' levels of analysis are theorized to be most salient to the development of the attack script, and the most likely to yield data; they are, therefore,

the focus of HUJI's data collection efforts, an effort assisted by the team at University College London (UCL).

Figure 1. Risk Analysis Matrix[1]

		Phase of Event		
		Radicalisation	**Attack Preparation**	**Attack**
Level of Analysis	**Individual**	Susceptibility to moral change Susceptibility to social selection Susceptibility to self-selection	Social, physical and cognitive resources Susceptibility to social and self-selection	Social, physical and cognitive resources
	Situational	Exposure to radicalising settings Radicalising agents Radicalising teachings Social monitoring context	Opportunity structure Moral context Perception of action alternative Perception of capability (risk) Emergence of motivation	Opportunity structure Moral context Perception of action alternative Perception of capability (risk) Maintenance of motivation
	Social Ecological	Emergence and maintenance of radicalising settings	Emergence and maintenance of opportunity structure	Emergence and maintenance of opportunity structure
	Systemic	Emergence and maintenance of radicalisation-supportive social ecologies Emergence of social selection processes	Emergence and maintenance of opportunity-supportive social ecologies Emergence of social selection processes	Emergence and maintenance of opportunity-supportive social ecologies

[1] The darker the shading of the cell, the higher our expectation of the possibility of capturing data relevant to some or all of the factors and processes it contains.

1.2 Deliverable objectives

The key objectives of the present deliverable are as follows:

- To inventory the data on LAE attacks collected to date by the HUJI and UCL teams;
- To outline the remaining data collection activities needed to meet the requirements for data collection set out in the DNI (D3.2);
- To provide a very preliminary description of the data, for which collection is largely completed;
- To outline the limitations inherent in the research design adopted here and implications for the project's next steps.

2. Methodology and data collection activities

2.1 Remarks on geographical sampling

As required in the DNI, the data collection approach for the attack component of WP5 is taking place at the level of three separate samples, to try and balance the need for sufficient level of detail with regards to the factors and mechanisms implicated in lone actor attacks, without neglecting issues of internal and external validity.

With regards to this last, One may question the value of developing a country-specific (Israel and Occupied Territory) Large-N dataset (detailed below), when developing a general script of LAEEs, which is intended to support the development of requirements for LAEE countermeasures with applications across Europe.

We would argue that the value of collecting and analysing data on LAE attacks in Israel and the Occupied Territories is twofold:

1) Firstly, *the relatively high frequency of lone-actor terrorist attacks in this area allows a uniquely large sample which will permit statistical analysis that is impossible to conduct elsewhere*. Hence, the use of Israeli data allows the PRIEM Consortium to address the challenge set by low probability events, as described in the Blackett Review (Government Office for Science 2011) and discussed at length in Part B of the PRIME DoW.

2) Secondly, *there are historical reasons to expect that patterns of LAE methods which emerge in Israel and the Middle-East may later be "imported" into Europe* (Midlarski et al. 1980; Sandler and Lapan 1988). Attackers coming from the Middle-East may choose to execute their attacks in a European country. So-called "home-grown" actors may acquire practical knowledge of lone actor attack *modus operandi* and/or ideological inspiration (in person or online) from Middle-Eastern sources, which themselves will have drawn from experience acquired in Israel – regarding e.g., weaponry, target, or motivation to act. This contagion of ideas and behaviours from Israel to Western democracies can be perceived as a part of the "globalisation of civil war", whereby the origin of the attack, either in practice or in ideology, is abroad (Crenshaw, 2000). In this regard, the best documented example of diffusion of terrorist methods from Israel to Europe is suicide bombing. In the mid-1990s, suicide bombings became a common phenomenon in Israel, and were then treated by scholars as a unique and distinct Israeli problem, related to its specific political and geographical characteristics. This perception of suicide bombing as a Middle-Eastern phenomenon remained unchallenged, even as its implementation spread to other countries. But by the end of 2003, suicide bombing was recognised a world-wide problem, and as a central concern for both Europe and the US (Atran, 2006).

Given this history, it is reasonable to assume that other terrorist patterns, which to date may seem a relatively unique Israeli phenomenon (e.g. repeated run-over attacks), may later appear on European streets. It is commonly understood that anticipating technological innovation is one of the main challenges in the counter-terrorism field. Hence the value of a high-volume database of recent LAE attacks which have occurred in Israel and the Occupied Territories.

2.2 Large-N sample

The "Large N" sample of LAE attacks is made up of two sets of data.

2.2.1 UCL database

Work carried out in WP4 ('Meta-Script Technical Development') established that the formal, Bayesian Network-based scripting approach adopted by the project would require a (relatively) large dataset of LAEEs made up of case-based observations that could be coded with some degree of objectivity and reliability. To develop this dataset, the PRIME project adopted the open-source data collection protocol developed by Gill and colleagues (Gill, Horgan & Deckert 2012; Gill & Horgan 2014). The task of carrying out data collection for the Large-N was allocated to the UCL team. That work involved

updating the existing database of lone actors assembled by Gill and colleagues, which, at the time the PRIME project began, contained 119 lone actors who engaged in or planned to engage in terrorism in the United States and Europe, and were convicted for, or died in, the commission of their offence between 1990 and 2011 (Gill et al. 2014). For reference, a list of variables included in the original Gill et al. database can be found in Appendix A of the present deliverable.

The original database contained both individuals who committed their offence autonomously, with or without links to an organisation, and isolated dyads, which are pairs of individuals operating independently of a group. That original dataset contained 185 variables. Independent coders collectively spent 5500 hours working on data collection and coding. To qualify for inclusion, each observation had to be recorded by three independent coders, then results reconciled in two stages (coder A with coder B, then coders AB with C). Most of the material was sourced using LexisNexis (e.g. media reports, scholarly articles, published biographies), and therefore qualifies as open source.

At the start of the PRIME project, all new LAEs that emerged in 2012, 2013 and 2014 were added to the database, while, to conform with the definitional requirements of PRIME (see D3.1), dyads were removed from the original database (n=19). Likewise, cases were removed from the original dataset if 1) the individual was part of a cell; 2) they were arrested for non-attack related behaviours (e.g. dissemination of publications); 3) they were involved in attacks with no ideological motivation; 4) their arrest involved an FBI sting operation; and 5) the individual was not convicted. This led to the removal of a further 24 cases from the original Gill et al dataset. Taking updates up to 2014 into account, this produced a dataset of 111 cases which fit the PRIME definition requirements. The countries represented in the large-N dataset are the US, UK, Australia, Norway, The Netherlands, Czechoslovakia, Denmark, Sweden, Poland, France, and Germany.

Additionally, cases from 2000 onwards were re-examined for new information that might have come to light in open sources since the initial dataset was built. Furthermore, non-UK European cases, where the lack of language expertise in the original data collection may have hindered the original coding effort, were recoded. This particular effort is ongoing.

Two additional, significant data collection endeavours are still in progress at the time of writing this deliverable. The first involves coding all lone actors active in 2015 (and some leftover cases from 2014). It is anticipated that this will add around 20 new cases to the dataset (a definite number cannot be stated until each actor has been evaluated to make sure they fit the project's definitional requirements).

The second data collection effort involves coding all existing cases in the dataset with a new set of questions produced to suit PRIME's data needs. This increases the number of variables from the original dataset by over 30%. In particular, questions related to the radicalisation and attack preparation phases of LAEEs have been expanded. This addition of new variables to the Large-N codebook was closely informed by the data collection and preliminary analyses carried out by the subscript teams (AaU, UoL, HUJI) on the medium-N and small-N datasets, which is why this effort did not get under way practically until the project mid-point and the Reassessment of Data Needs milestone (MS10).

Using a Bayesian Network approach to analyse the Large-N dataset and produce an integrated script requires that the analyst choose which variables to input into the network. The purpose of the subscripting activity and associated analytical work carried out by the AaU, UoL and HUJI teams is to provide an empirical basis to inform those choices (see D3.2).

2.2.2 HUJI database

The second set of data consists of a database of, to date, 155 cases of LAE attacks, which have occurred in Israel and the Occupied Territories[2] between 2000 and 2015. This number is continually increasing as recent events are added to the database.

Data sources

Data collection for this sample has been carried out using the original Gill et al. codebook to allow for integration and comparison between the datasets. The purpose of this integration is to maximize the external validity of the findings regarding LAE attacks. That being said, several of the original variables were customized to better reflect the Israeli context and to allow a more detailed analysis of the attack phase of LAE attacks. The modified variables can be found in Appendix B.

Data collected to make up the large-N HUJI sample are drawn from 3 main sources, which together provide a detailed description of the LAE attack phase.

[2] Judea and Samaria. The Gaza Strip is not included.

2.3 Medium-N sample

As set out in the DNI (D3.2), the purpose of the medium-N sample analysis is to help refine the proto-script developed from the processing of the large-N data, and to provide information on transition phases (between radicalization and attack preparation; between attack preparation and attack), as the necessary level of detail is likely to be absent from the Large-N (quantitative) dataset. In combination with the in-depth (small-N; see below) case studies, the medium-N analysis is intended to enable a better understanding of interacting factors and mechanisms in the attack process (e.g. interaction of individual- and situational-level factors in attack motivation maintenance).

The Medium-N sample consists of a core set of 15 LAE attack cases. The selection of cases took place in collaboration with the Radicalization (University of Aarhus) and Attack Preparation (University of Leiden) scripting teams, in order to ensure a minimum number of shared cases across the LAEE timeline. Hence, the cases selected are those that have been identified out of the large-N database, which are richest in data across all 3 phases of the Risk Analysis Matrix.

The medium-N sample rests on the construction of comprehensive case studies of 15 European and American LAE attacks, which have occurred between years 1995 to 2013 (see list in Table 1 below). The selected events include both failed and successful attacks across a range of ideologies. Nine cases are Islamist inspired, 4 are extreme-right-wing inspired, and 2 are single-issue inspired. Three cases, listed in the table below as "provisional", may later be included in the Medium-N sample, pending data collection activities carried out by the University of Leiden scripting team. Although their focus is on the attack preparation phase of the matrix, there is reason to believe that privileged access to data regarding these cases, in the process of being secured by UoL, may yield rich data on the attack as well.

The data collection for the Medium-N sample began in January 2015 and has been carried out by the UCL team. The data required has been gathered through multiple open source outlets, including the LexisNexis archive, scholarly articles and books, and public record depositories. The case studies include detailed life histories, with attention to both violent and non-violent behaviours.

Timelines have been constructed, which detail the attack phase of the LAEEs, using a time instrument built according to principles initially devised by the AU team (radicalisation) and emulated by the UoL team (attack preparation) to assist with seamless integration of the whole LAEE timeline. The specificity of each timeline varies by case. Certain LAEEs are described in open source information in great detail, giving finer resolution to the analysis. To date, case study data on all 15 attack cases have been collated, and all 15 timelines have been completed, pending further analysis.

The timeline instrument used to collect the Medium-N sample data can be found in Appendix D of D3.2 "Data Needs Inventory".

Table 1. Medium-N sample cases

	Name	Type of incident	Country	Year	Ideology
Core cases					
1	Faisal Shahzad	Failed Attack	Pak/USA	2009	Islamist
2	Richard C. Reid	Attempt	UK/USA	2001	Islamist
3	Taimour Abdulwahab	Attack	Sweden	2010	Islamist
4	Nicky Raymond Reilly	Failed Attack	UK	2008	Islamist
5	Mohamed Merah	Attack	France	2012	Islamist
6	Clayton Lee Wagner	Attack	USA	2001	Single Issue (Anti-Abortion)
7	Farouk Abdulmuttalab	Failed Attack	USA/UK	2009	Islamist
8	Mohammed Bouyeri	Attack	Netherlands	2004	Islamist
9	Timothy James McVeigh	Attack	USA	1995	Extreme right
10	Richard Baumhammers	Attack	USA	2000	Extreme right
11	Volkert van der Graaf	Attack	Netherlands	2002	Single Issue (Animal Rights)
12	Abdulhakim Muhammad	Attack	USA	2009	Islamist
13	Roshonara Choudhry	Attack	UK	2010	Islamist
14	David Copeland	Attack	UK	1999	Extreme right
15	Anders Behring	Attack	Norway	2011	Extreme right

	Breivik				
Provisional cases					
16	John Salvi III	Attack	USA	1994	Single Issue (anti-abortion)
17	Rachel Shannon	Attack	USA	1993	Single Issue (anti-abortion
18	Martyn Gilleard	Disrupted plot (stockpiled weapons/ explosives)	UK	2008	Extreme right

2.4 Small-N sample

The third and last, Small-N sample, is intended to allow for an in-depth examination of the attack phase of LAEEs, shedding further light of the key interacting factors and mechanisms involved, with particular attention to the situational mechanisms identified in the Risk Analysis Matrix (i.e. perception of capability; maintenance of motivation). Such mechanisms, it was theorized, would be difficult to observe in the absence of rich, in-depth data. The small-N sample is also intended to permit comparison between Salafi-inspired and non-Salafi-inspired attack characteristics.

The data gathered for this sample consist of a comprehensive qualitative description of Salafi-inspired and non-Salafi-inspired attack behaviours, as well as data describing the ideological basis which permits lone actors activity. The comparison of Salafi-inspired and non-Salafi-inspired attack variable is based on 12 LAE attacks and attempted attacks (see Table 2 below for a list of the Salafi-inspired cases), which have occurred in Israel between 2008 and 2011. The data regarding these cases have been collected from police reports (including transcripts of interrogations), and supplemented through examination of open source data (i.e. media and social networks). Here again, richness as well as diversity guided the purposive sampling process.

Table 2. Small-N sample cases (Salafi-inspired)

Case No.	Description
1	Killing of a taxi driver in Migdal Ha-Emek, 2009
2	Violent assault on a pizza delivery man near Migal Ha-Emek, 2009

3	Torching of a bus during the Pope's in Nazaret, 2010
4	Disrupted plot to attack a Christian accused of slandering the Prophet Muhammad in the Nazaret area, 2010
5	Disrupted plot to attack Arab Israeli soldiers who serve in the IDF, Daburia, 2011
6	Disrupted plot to attack a police station in Daburia, 2011

The in-depth case studies also devote particular attention to the analysis of the ideology which supports the attack phase of LAEEs, conceived here as a cognitive resource (capability) for the attacker (see D3.1 "Risk Analysis Framework" for a discussion). The collection of data on the ideological background of the attacks draws from three main data sources:

1. "Dabiq" (Arabic: **دابق**) - the online magazine used by the Islamic State of Iraq and the Levant (ISIL/ISIS/IS) for propaganda and recruitment, from 2013 to present;

2. "Inspire" - an English language online magazine reported to be published by the organization al-Qaeda in the Arabian Peninsula (AQAP), from 2010 to present; and

3. Islamic law publications disseminated over the internet, from 2003 to present.

Data gathering for the small-N sample began on September 2014. Police files have been processed for all Salafi-inspired cases; complementary data collection from open sources is still in progress. Data collection for the 6 non-Salafi-inspired cases has now started. Once completed, the dataset is to be analyzed using qualitative case-study methods.

3. Preliminary description

While data collection activities are well-advanced for all samples, analysis is ongoing and will remain, to some extent, an iterative process as the RAPA scripting teams and the UCL team responsible for the development of the meta-script and scripting methodology develop a dedicated process to derive scripts from empirical data – a process, which, to date, is lacking in this field.

What follows are, therefore, only descriptive findings produced out of a very preliminary analysis of run-over (29 out of 155 cases) and stabbing (85 out of 155 cases) attacks committed in Israel between 2000 and 2015, which make up the parts of the Israeli Large-N dataset delivered to the HUJI research team by the time this deliverable was produced.

3.1 Run-over LAE attacks in Israel and the Occupied Territories, 2000-2015

All 29 run-over attacks which took place in Israel between 2000 and 2015 were included in the analysis. Basic statistics seem to challenge some conventional assumptions about lone actors. They suggest that most of the run-over attacks were planned, rather than spontaneous (62%), and that the majority of the attackers had no known mental health (70%) or social problems (85%) at the time of the event. Contrary perhaps to expectations, the attackers in the large-N Israeli sample do not appear to be socially isolated or marginal outcasts: 63% were married, 52% had children; and almost all of them (92%) were employed. All of them were adults; 60% were over 26 years old, and 67% of them had an average or above average socio-economic status.

In line with the literature regarding lone actors (Becker, 2014; Borum, 2013; Gill, Horgan and Deckert, 2014), these preliminary figures suggest that lone actors terrorists may cover up for a lack of resources by taking advantage of nearby opportunities: they tend to operate within familiar environments (70%), use their own vehicle or the vehicle provided to them at work as a weapon (67%), and operate during work hours (37%) or after dark (40%).

Another suggestive figure is that almost half (48%) of the lone actors in this subsample gave some kind of preliminary warning prior to the attack.

3.2 Stabbing LAE attacks in Israel and the Occupied Territories, 2000-2015

The descriptive analysis of 85 lone actor stabbing attacks, which took place in Israel between 2000 and 2015 suggests that lone actor stabbings are, at first glance, somewhat different to run-over LAE attacks in terms of both attacker and attack characteristics. Stabbing lone actors are younger than run-over attackers – 35% of them are minors, and only 10% are older than 31 (as oppose to 41% among run-over attackers). Accordingly, most stabbing attackers are single (61%) and very few of them are married or divorced (12%).

Stabbing attackers seem to have less prior risk indicators than run-over attackers; for example, most of the stabbing attackers do not have any known mental health problems (90%); and the vast majority of stabbing attackers do not have any history of criminal or terrorist activity (86%). An significant proportion of stabbing attackers (42%) were not killed or caught during or after the attack phase, suggesting that this kind of weapon choice permits the attacker to escape the scene and might present a bigger challenge to law enforcement end-users.

4. Conclusions and future steps

4.1 Limitations of the research

The research design and activities described in the present document rely on triangulation to deliver as rich and exhaustive a database of lone actor attacks as can be assembled with the time and resources available to the PRIME Project. Following long negotiations, the HUJI research team was granted access to privileged information from Israel national security agencies, which is a rare occurrence with regards to terrorism research in general, and lone actor extremism research in particular. The resulting dedicated datasets are likely going to constitute, in themselves, unique contributions to knowledge in this field.

Nevertheless, the limitations of our research and subsequent findings must be acknowledged, and a few such key limitations (and mitigation measures) are addressed below.

- Not unexpectedly, the quality, volume and level of detail on LAE attacks vary greatly between cases, and we must contend with missing information regarding some attack types more than others. For example, as run-over attackers are often killed during the attack, these cases tend to lack information that would have come out during post-attack interrogation by police. Regarding stabbing cases, attackers are not always caught, meaning that many offender characteristics will be absent from the database. Wherever possible, especially for the large-N datasets, we have endeavoured to clearly distinguished "no" from "missing" answers, while erring on the side of caution, meaning that "no" answers are likely to be undercounted (Gill et al. 2014).

- Regarding the data provided by the Israeli Security Agency, this set does not include cases where the lone actor was an Israeli Jew. Although the number of attacks concerned is relatively small, for the sake of generalizability, comparability, and to comply with the terms of the PRIME Stigmatisation,

Discrimination and Social Exclusion Mitigation Plan (see D2.4), the HUJI team has endeavoured to overcome this limitation by drawing from other data sources to collect data on attacks by Jewish lone actors – such as court files, judicial verdicts, and media and social networks open source materials.

- Missing data aside, to the extent that a significant amount of data were obtained from open sources, including media reports, several biases are likely to be present within the collected samples, though some more than others. Notably, cases are likely to be biased towards those incidents that have been most heavily reported on in the English-speaking press in the case of the Gill et al. database, from which the medium-N sample was also extracted. This must limit the generalizability of our findings; though, with regard to all 3 LAEE phases, we have tried to address this weakness by choosing small-N case studies from under-represented countries. With regards to the Israeli dataset, biased underreporting also cannot be underestimated, something else to keep in mind when making final claims based on the result of our analyses.

4.2 Next steps

To date, most of the Large-N, about half of the Small-N, and the whole of the Medium-N data on LAE attacks have been collected. Future steps involved completing data collection for the Large-N and Small-N samples by the beginning of 2016, and carrying out analysis of the collected data.

As the data analysis is not an end in itself, but rather one step in supporting the process of developing and attack script of LAEEs, this phase of the work will take place in close collaboration with the UCL team in charge of developing the scripting methodology and the LAEE meta script. This will take place of the first half of 2016, to leave the counter-measures requirements teams time to identify pinch points and validate the eventual requirements portfolios, as set out in the PRIME DoW.

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Appendix A – Variables included in the Gill et al. original database (Large-N sample)

Name
Known aliases
Gender
Date of birth
Age of first terrorist activity
Place of birth
Citizenship
Town size
Town size of last known address
Marital status at time of offence
Marital status of parents
Children at time of offence
Highest level of education achieved
University experience
Exceptional academic achievements
Occupation
Years active
Previous military experience
Current military status
Length of military experience
Previous criminal convictions
Juvenile arrest
Imprisonment
Ideological orientation
Religious affiliation
Letters or public statements prior to attack
Statement to family or friends prior to attack
Verbal statement to audience prior to attack
Grievance known
Extremism known
Pre-event warning
Change of address prior to attack
Timing of change of address
Change of ideological orientation prior to attack
Timing of change of ideological orientation
Intensification of ideological commitment
Timing of intensification

Change in religious beliefs prior to event
Timing of change in religious beliefs
Recent unemployment
Timing of unemployment
Recent death in the family
Timing of death in the family
Recent dropping out of school
Timing of drop out
Clearing of bank accounts prior to attack
Timing of clearing of bank accounts
Debt pay off prior to attack
Timing of debt pay off
Legitimisation sought from leading religious or political figures prior to attack
Fundraising prior to attack
Past fundraising
Proximate upcoming life change
Change in physical appearance prior to attack
Denouncement of others who share ideology
Living alone at time of attack
Living away from home at time of radicalization to new ideology
Hands on training prior to attack
Travel abroad for preparatory activities
Learning through virtual sources
History of substance abuse
History of mental illness
Treatment received for mental illness
Social isolation
Engagement in dry-runs
Evidence of bomb-making manuals in home
Recently joined group/organization/movement
Recently exposed to new media
Reported change in work performance prior to attack
Timing of reported change
Reported significant work-related loss or stressor
Timing of work-related stressor
Reported change in academic performance
Timing of academic change
Identifiable tipping point
Increase in level of physical activity prior to attack
Timing of increase

Interruption of proximate attack preparation goal
Timing of interruption
Experience of degradation prior to attack
Timing of degradation experience
Experience of prejudice or unfairness
Timing of prejudice experience
Experience of being lied to or having promise broken
Timing of broken promise experience
Experience of being disrespected
Timing of disrespect experience
Experience of being ignored or treated poorly by someone important
Timing of poor treatment
Experience of being harmed due to negligence
Timing of harm
Experience of someone important demonstrating they do not care
Timing of lack of care
Experience of being victim or physical or verbal assault
Timing of assault
Experience of helpless victimization
Timing of victimization
Experience of problems with personal relationships
Timing of relationship problem
Experience of financial problem
Timing of financial problem
Anger leading up to the attack
Timing of anger
Evidence of escalation of anger
Expressed a desire to hurt others
Elevated level of stress
Long term sources of stress
Style of coping with stress
Engagement in preparatory activities
Number of trips undertaken
Location of trips
Timing of trips
Use of drugs or alcohol before the attack
Past violent behavior
Type of target
Nature of attack location
Ownership of vehicle
Mode of transport to location of attack

Prior history with location of attack
Timing of attack
Stockpiling of weapons
Mode of obtaining weapons
Behaviour contrary to professed ideology
Obsession with specific event or phenomena
How was the individual caught, if arrested prior to attack
How was the individual caught, if arrested after the attack
Length of time between attack and arrest
Expression of remorse/regret after attack
Change in beliefs after attack
Insanity suggested at trial
Violence of attack
Apparent capability for attack
Type of attack
Attack method(s)
Number of IEDs
IED components
Group to which target belonged
Discriminate target
Letters or public statements post attack
Difference between planning and execution of attack
Distance between residence and attack location
Type of gateway
Number of events during attack
Timespan between first and last event
Change of appearance just before the event
Numbers killed
Numbers injured
Family members or associates involved in crime or political violence
Spouse/partner involved in movement
Face-to-face interaction with wider network
Virtual interaction with wider network
Other individuals involved in procuring materials used in attack
Other individuals involved in assembling IED
Planning known by another person
Evidence of command and control links with others
Previous membership to wider network
Disengagement
Timing of disengagement
Engaged in recruiting others prior to attack

Timing of recruitment
Claim to be part of wider movement/group/network
Evidence of consumption of literature produced by wider movement
Evidence of consumption of literature about other lone actors
Evidence of consumption of propaganda put out by other lone actors
Joined wider movement post attack
Produce own propaganda materials
Killed during attack
Plans for further attacks
Public claim of responsibility
Evidence of collecting materials produced by others publicizing own actions
History of arrests
History of convictions

Appendix B – Gill et al. codebook modified variables (Israeli Large-N sample)

7. Place of Birth:
   1 [ ] Israel
   2 [ ] Judea and Samaria
   3 [ ] Gaza strip
   4 [ ] Other
   88 [ ] Unknown

8. Citizenship:
   1 [ ] Israeli
   2 [ ] Palestinian
   3 [ ] Other *please specify*
   88 [ ] Unknown

29. Did the individual own a vehicle?
   1 [ ] No
   2 [ ] Yes
   3 [ ] The individual stole a vehicle for this attack
   88 [ ] Unknown

   If 2 [ ] Yes *What?*

4. Were there multiple attack methods used?
   1 [ ] No
   2 [ ] Yes
   88 [ ] Unknown

If yes, please check each used:
   1 [ ] Armed Assault
   2 [ ] Assassination
   3 [ ] Bombing/Explosion
   4 [ ] Facility/Infrastructure Attack
   5 [ ] Hijacking
   6 [ ] Hostage Taking (Barricade
   7 [ ] Hostage Taking (Kidnapping)
   8 [ ] Unarmed Assault
   9 [ ] Other: *please specify:*
   10 [ ] Run over

5. What kind of weapon was used?
   1 [ ] vehicle

2 [ ] heavy machinery
3 [ ] knife
4 [ ] axe
5 [ ] rock
6 [ ] armed weapon Incident)
7 [ ] Other: *please specify:*
88 [ ] Unknown

6. How did the attacker get the weapon?
1 [ ] bought it
2 [ ] took it from the house
3 [ ] took it from the workplace
4 [ ] found it
5 [ ] got it from friends/family
6 [ ] built it
7 [ ] Other: *please specify:*
88 [ ] Unknown

7. Did someone help the attacker obtain the weapon?
1 [ ] No
2 [ ] Yes
88 [ ] Unknown

9. Date and time of the attack:

10. Time type:
1 [ ] Morning (6 to 12 AM).
2 [ ] Noon (12 AM to 16 PM)
3 [ ] Afternoon (16 to 20 PM)
4 [ ] Night (20 PM to 6 AM)
88 [ ] Unknown

11. At the time of the attack, was the attacker on their way:
1 [ ] To work
2 [ ] From work
3 [ ] Other: *please specify:*
88 [ ] Unknown

13. What group does the target belong to?
1 [ ] Government
2 [ ] Business
3 [ ] Private citizen
4 [ ] Military
5 [ ] VIP

88 [ ] Unknown
99 [ ] Other *Please Specify*

15. Was the target of the attack the same as the planed target?
1 [ ] No
2 [ ] Yes
88 [ ] Unknown

16. If the target changed, why?
1 [ ] Too much security at the original target
2 [ ] Not enough people at the original target
3 [ ] Different reason:
88 [ ] Unknown

19. Event location: *(Please use GPSVisualizer: http://www.gpsvisualizer.com/)*

20. Was the event located in:
1 [ ] Public place
2 [ ] Transport site (e.g., bus stop)
3 [ ] Place of gathering
4 [ ] private place
88 [ ] Unknown

22. Did the attacker have some kind of history with the attack location?
1 [ ] No
2 [ ] Yes
88 [ ] Unknown

23. If the Yes, what kind of history?
1 [ ] work place
2 [ ] part of the attacker's everyday life
3 [ ] a place he/she heard about
4 [ ] a place related to the attacker's ideology
88 [ ] Unknown
99 [ ] Other *Please Specify*