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The National Consortium for the Study of Terrorism and Responses to Terrorism

ANATOMIZING THE BEHAVIOR OF RN-ARMED NON-STATE ADVERSARIES

DHS University Network Summit 2010

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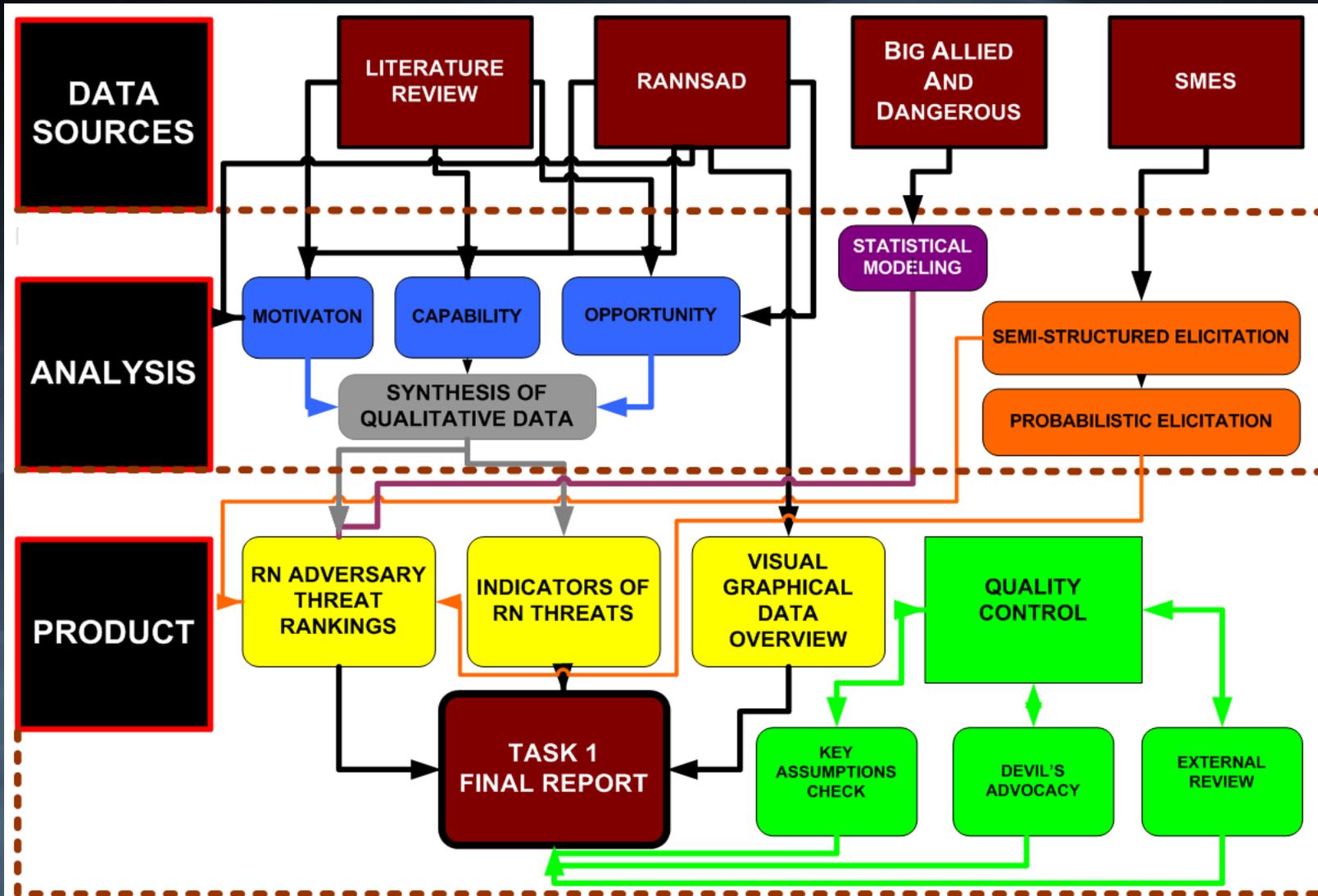
The *Anatomizing Radiological and Nuclear Non-State Adversaries* project broadens policymakers' and practitioners' understanding of RN adversaries and their behavior, including the pathways to acquisition that different adversaries might favor as well as their targeting and other tactical preferences that stem from larger strategic concerns.

Anatomizing Non-State Radiological and Nuclear Adversaries

Multi-methodological approach sought to determine:

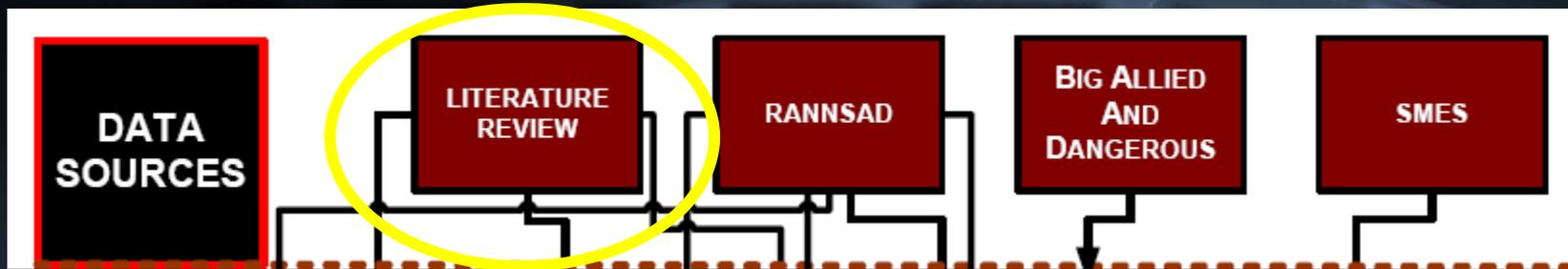
- Who are the most likely future RN perpetrators?
- What are the discernible indicators that tend to increase the probability that a particular actor will pursue R or N weapons?

Structure and Methodology



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SOURCE 1.a: RN Literature Review



THREAT = CAPABILITY

THREAT = CAPABILITY * MOTIVATION

**Potential RN THREAT = MOTIVATION *
CAPABILITY * OPPORTUNITY**

VNSA Capability Parameters of Radiological Weapons

TECHNOLOGY	SUFFICIENT CAPABILITY LEVEL	CRITICAL MATERIALS	OTHER MATERIALS
Acquisition of radioactive material	Ability to procure radiological	Radiological materials.	
Handling and transportation of radioactive materials	For more designs, to reduce to fine liquid	Plume prediction software might be useful in some operations.	st be on, some
Dispersing radiological materials	aerosol or other spraying operation. designs, “reduce material to fine powder or to liquid solution for aerosol or other spraying operation.”	necessary.	to prevent may also be necessary.

RANNSAD (Partial Screen: Plot ID)

Radiological and Nuclear Non-state Adversaries BETA	
Plot ID	
Logistics	Results and Objectives
Commentary	Notes
Reference	
Auto ID	3
Perpetrator Type	Formal Organization
Ideology	Secular Left-Wing
Profile ID no	0
Org. Affiliation	Fuerzas Armadas Revolucionarias de (
Sup-Type	Socialist/Communist/Ma
Profile Name	FARC
Organization Type	Recognized Terrorist Organization
Alleged/Suspected	<input type="checkbox"/>
Further Research Needed	<input type="checkbox"/>
Perpetrator 1 Demographics	
Name	Angel Gabriel Losada
Age	0
Country of Origin	Colombia
Residence	Unknown
Education Level	Unknown
Education Discipline	
Education Details	
Vocation Type	Full-time terrorist
Vocation Details	Commander, 48th Front
Other Info	
Perpetrator 2 Demographics	
Name	
Gender	
Age	0
Country of Origin	
Residence	
Education Level	
Education Discipline	
Education Details	
Vocation Type	
Vocation Details	
Other Info	
Perpetrator 3 Demographics	
Name	
Gender	
Age	0
Country of Origin	
Residence	
Education Level	
Education Discipline	
Education Details	
Vocation Type	
Vocation Details	
Other Info	
Perpetrator 4 Demographics	
Name	
Gender	
Age	0
Country of Origin	
Residence	
Education Level	
Education Discipline	
Education Details	
Vocation Type	
Vocation Details	
Other Info	
Record: 3 of 45	Unfiltered
Search	

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RANNSAD (Partial Screen: Logistics)

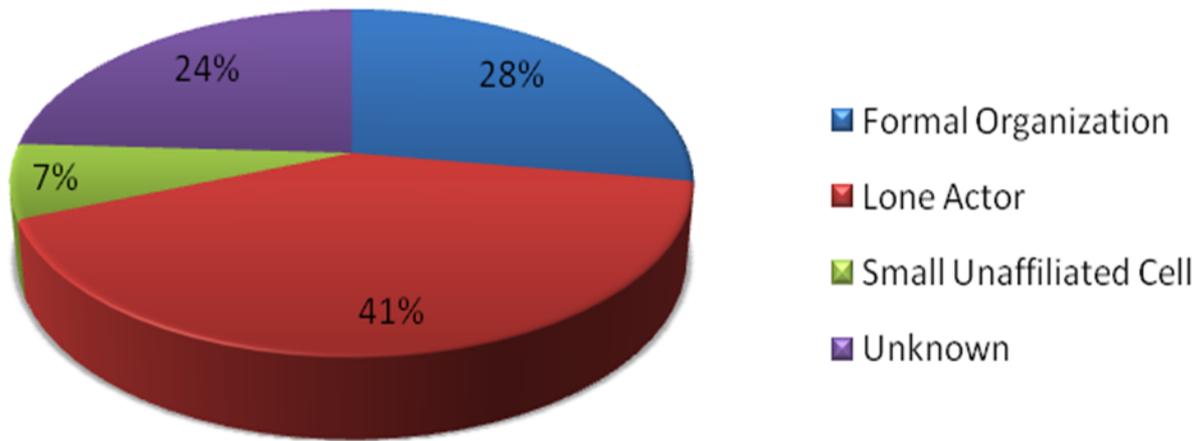
Radiological and Nuclear Non-state Adversarie					
Plot ID	Logistics	Results and Objectives	Commentary	Notes	Reference
RN Activity Start	2/16/2008				
RN Activity End	3/1/2008				
Type of Agent(s) Involved	Indeterminate				
Highest Activity Type	Plot Only				
Facility Attack	<input type="checkbox"/>				
Intended Use					
		<input type="checkbox"/>	Radiological		
		<input type="checkbox"/>	Nuclear		
		<input checked="" type="checkbox"/>	Indeterminate		
Activity Details	<p>A March 1, 2008 seizure of FARC computer laptops by Colombian national police led to the discovery of an apparent pending transaction between Angel Gabriel Losada and a black market explosives dealer known only as "Belisario". This deal, explained in a confiscated February 16, 2008 e-mail, was for an initial shipment of 50 kg of uranium, with an option to purchase more at a later date. Losada began the negotiations to acquire 50 kg of uranium for \$2.5 million/kg with the declared intent (to the seller) of re-selling the uranium to an unspecified government at an inflated price. In March 2008, Colombian Vice President Francisco Santos alleged that FARC intended to use the uranium to create a radiological dispersal device (RDD), pointing out that the price quoted in the e-mail indicated processed uranium. [D]</p>				
Type of (Intended) Acquisition	Purchase from black market				
Type of (Intended) Ultimate Use	RDD				
Use/Acquisition Details	<p>It is not known how (or whether) the dealer was able to get access to 50+ kg of processed uranium (some speculate that it might have been highly enriched uranium</p>				
Record: 3 of 45	Unfiltered	Search			

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Descriptives

Figure 2b: Perpetrator Type

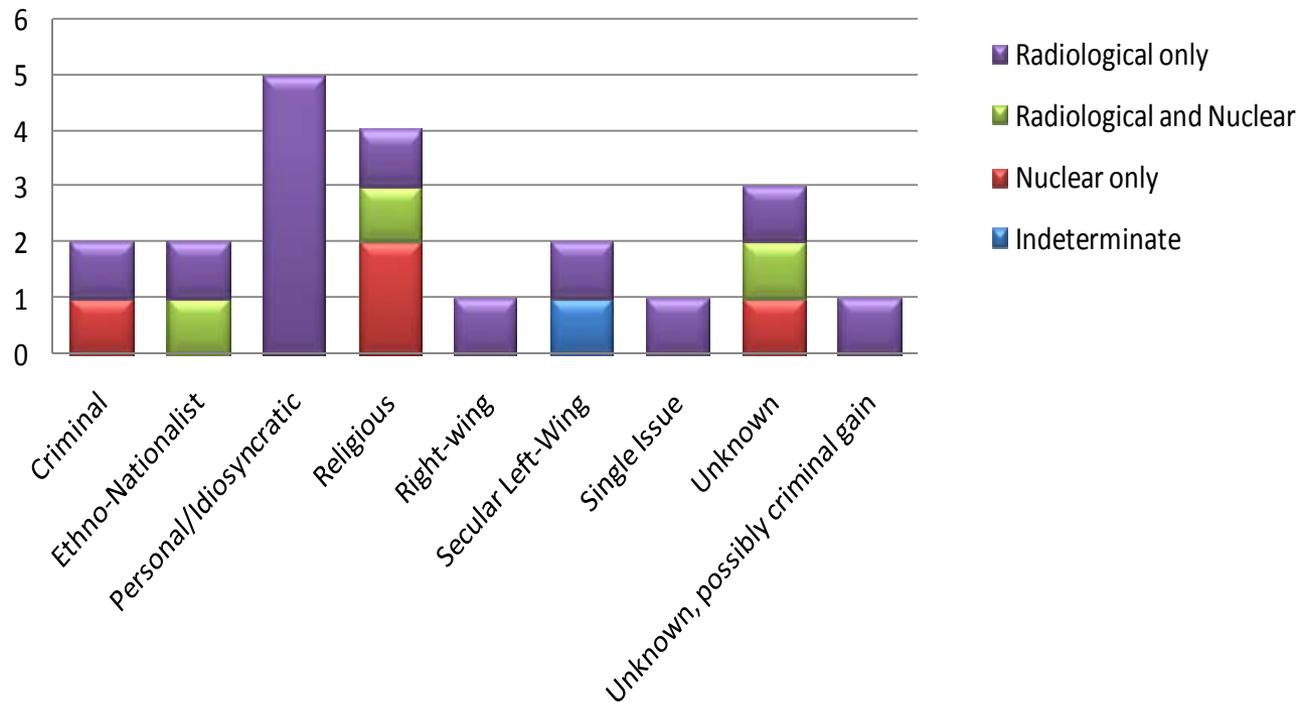
(Excluding dubious and possible smuggling cases, n=29)



Descriptives

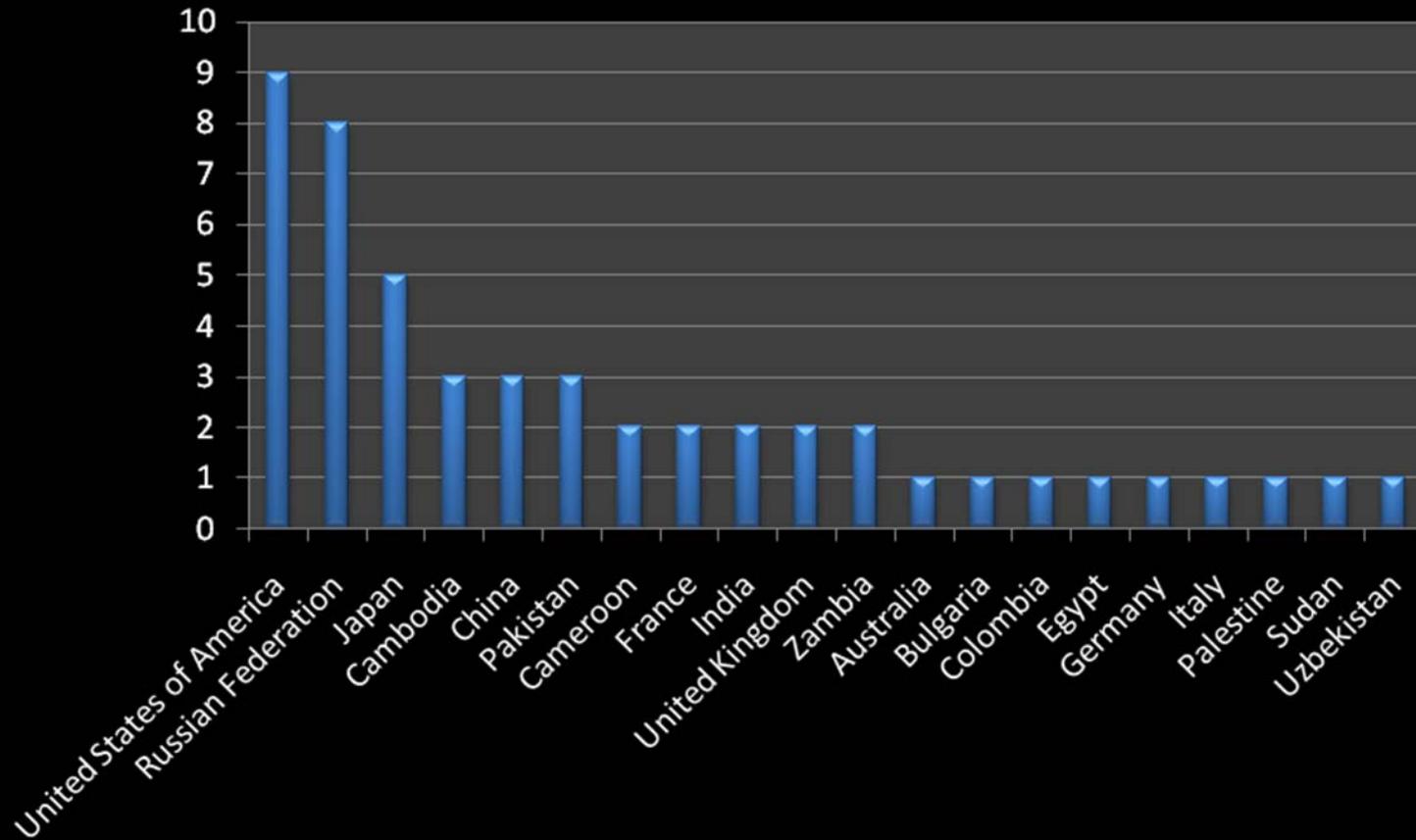
Figure 4.IV.3c: Ideology

(Excluding dubious and possible smuggling cases and facility attacks, n=21)



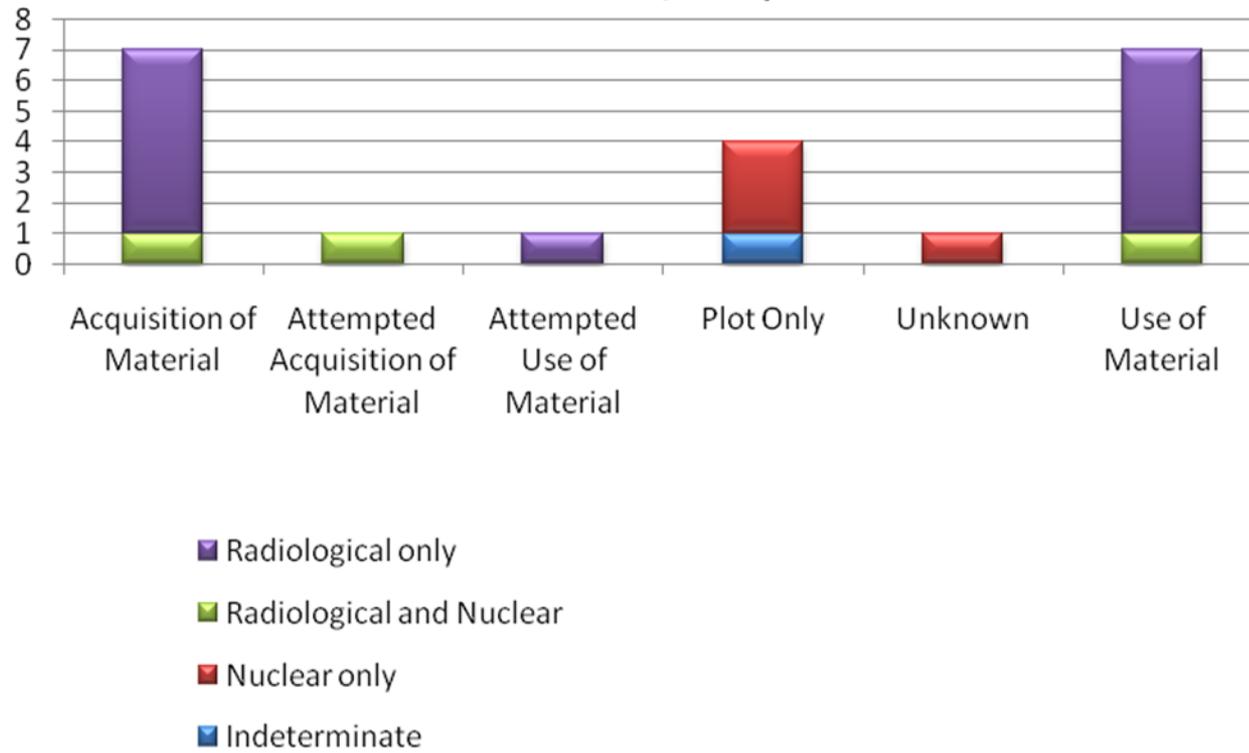
Descriptives

Figure 4c: Country of Origin



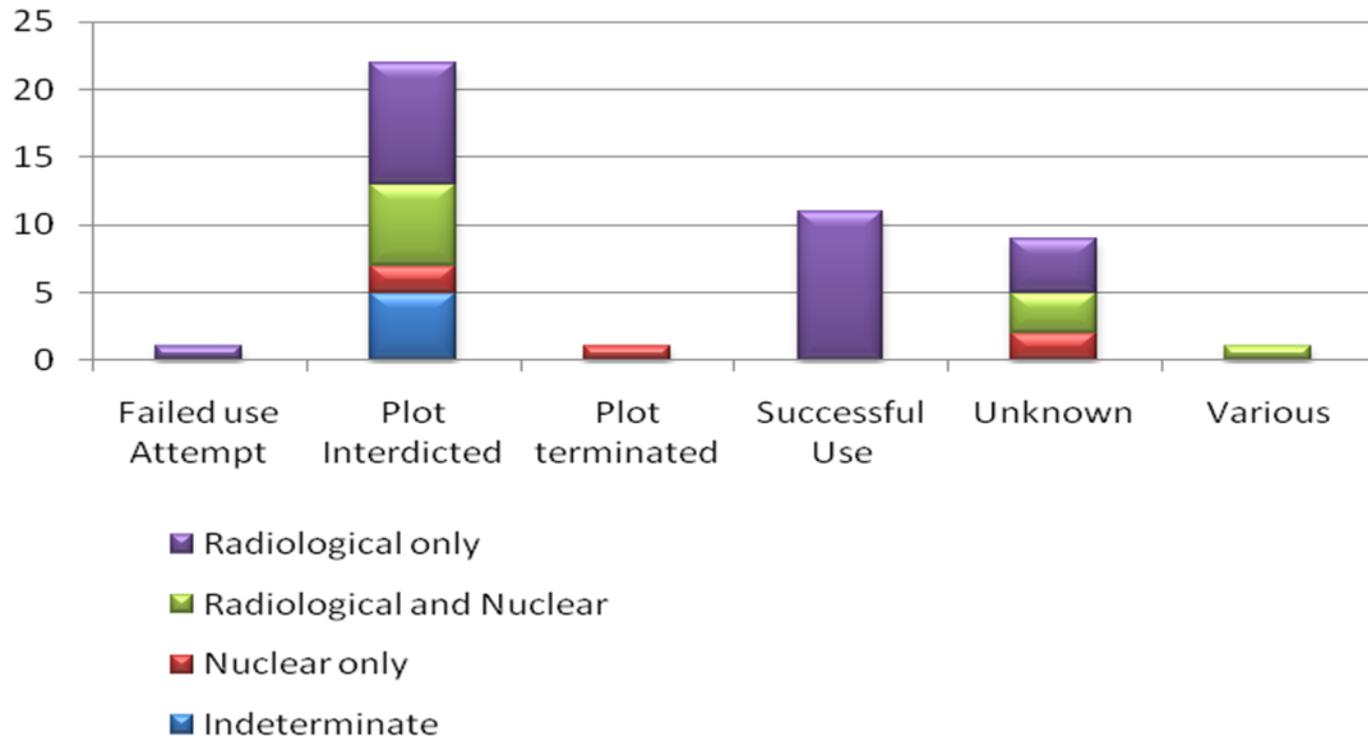
Descriptives

Figure 5c: Highest Activity Recorded
(Excluding dubious and possible smuggling cases and facility attacks, n=21)

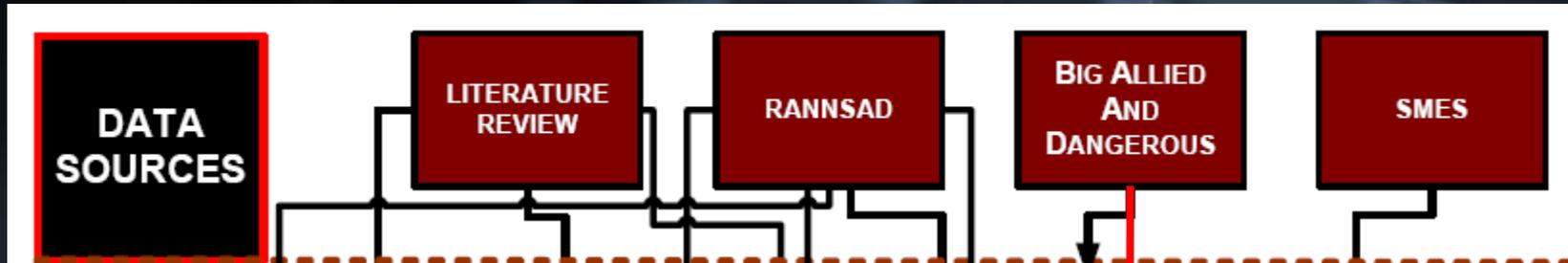


Descriptives

Figure 6a: Reason for Outcome
(All Profiles, n=45)

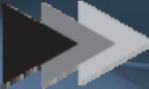


STATISTICAL MODELLING WITH BAAD



**STATISTICAL
MODELING**

**RN ADVERSARY
THREAT
RANKINGS**

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STATISTICAL MODELLING WITH BAAD

Percent probability	Organizations (bolded are organizations that empirically had the markers used to create the dependent variable during this time period)
99	Al-Qa'ida
92	Hamas
68	Lashkar-e-Taiba (LeT)
63	Revolutionary Armed Forces of Colombia (FARC)
50	Al-Qa'ida Organization in the Land of the Two Rivers
26	United Self-Defense Forces of Colombia (AUC)
22	Pattani United Liberation Organization (PULO)
21	Palestinian Islamic Jihad (PIJ)
17	Islami Chhatra Shibir (ICS)
13	Free Aceh Movement (GAM)
12	Lashkar-e-Jhangvi (LeJ)
10	Hezbollah
10	Taliban
<i>Groups that were not captured in the model</i>	
2	Tawhid and Jihad
1	Jemaah Islamiya (JI)

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ELICITATION RESULTS

Nuclear – Weigh

Group

Unidentified disgruntled scient

Unidentified apocalyptic miller

Al-Qa'ida central

Pakistani neo-Taliban element

Unidentified Sunni jihadist grou

Unaffiliated Sunni Jihadist cell

Unidentified Sunni Jihadist gro

Unidentified Shi'i Jihadist group (foreign-based)

Unidentified apocalyptic millenarian cult (US-based)

Unaffiliated Sunni Jihadist cell (US-based)

Unidentified Shi'i Jihadist group (US-based)

US-based Unaffiliated Cell - Right-wing



SEMI-STRUCTURED ELICITATION

PROBABILISTIC ELICITATION

Percentage Probabilities

Estimated Mid-Point	Lower	Upper
---------------------	-------	-------

28.05%	20.14%	38.06%
--------	--------	--------

15.94%	10.12%	23.81%
--------	--------	--------

14.96%	9.78%	21.89%
--------	-------	--------

12.81%	7.27%	21.02%
--------	-------	--------

8.18%	4.67%	13.13%
-------	-------	--------

7.15%	4.43%	10.85%
-------	-------	--------

7.07%	3.60%	11.92%
-------	-------	--------

6.00%	2.80%	11.18%
-------	-------	--------

5.09%	2.10%	10.00%
-------	-------	--------

2.84%	1.58%	4.46%
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2.53%	0.22%	6.25%
0.72%	0.23%	1.62%

Table 7.3: NUCLEAR NON-STATE ADVERSARIES

Qualitative Analysis		Quantitative Modeling		Elicitation	
1	Al-Qa'ida central	1	Al-Qa'ida central	1	Unidentified disgruntled scientist w/access (US-based)
2	Other Sunni jihadists	2	Hamas	2	Al-Qa'ida central
3	Chechen jihadists	3	Lashkar-e-Taiba (LeT)	3	Pakistani neo-Taliban elements
4	Disgruntled nuclear scientists	4	Revolutionary Armed Forces of Colombia (FARC)	4	Unidentified apocalyptic millenarian cult (foreign-based)
5	Newly emerging apocalyptic millenarian groups	5	Al-Qa'ida Organization in the Land of the Two Rivers	5	Unidentified Sunni Jihadist group (foreign-based)
6	A state-sponsored terrorist group with support from a rogue nuclear capable nation	6	United Self-Defense Forces of Colombia (AUC)	6	Unaffiliated Sunni Jihadist cell (foreign-based)
		7	Pattani United Liberation Organization (PULO)	7	Unidentified Sunni Jihadist group (US-based)
		8	Palestinian Islamic Jihad (PIJ)	8	Unidentified Shi'i Jihadist group (foreign-based)
		9	Islami Chhatra Shibir (ICS)	9	Unidentified apocalyptic millenarian cult (US-based)
		10	Free Aceh Movement (GAM)	10	Unaffiliated Sunni Jihadist cell (US-based)
		11	Lashkar-e-Jhangvi (LeJ)	11	Unidentified Shi'i Jihadist group (US-based)
		12	Hezbollah	12	US-based Unaffiliated Cell - Right-wing
		13	Taliban	13	US-based lone actor with a personal grudge or idiosyncratic motivation
				14	Ultrnationalists (US-based)

Table 7.2: RADIOLOGICAL NON-STATE ADVERSARIES

Qualitative Analysis		Quantitative Modeling		Elicitation	
1	Al-Qa`ida central	1	Al-Qa`ida central	1	Al-Qa`ida central
2	Lashkar-e Tayyiba	2	Hamas	2	Unidentified Sunni jihadist group (foreign-based)
3	Fringe US militia groups (possibly individuals associated with a Volksfront / National Alliance hybrid)	3	Lashkar-e-Taiba (LeT)	3	Unidentified Sunni Jihadist group (US-based)
4	Home-grown right-wing individuals not associated with any terrorist group (secular or nominally religious)	4	Revolutionary Armed Forces of Colombia (FARC)	4	Newly-emerging Iraq-forged mujahidin networks (Unidentified Sunni jihadist group)
5	Newly-emerging Iraq-forged mujahidin networks	5	Al-Qa`ida Organization in the Land of the Two Rivers	5	Shi'i Jihadist unaffiliated cell (US-based)
6	AQIM	6	United Self-Defense Forces of Colombia (AUC)	6	Unidentified Shi'i Jihadist group (US-based)
7	Newly-emerging apocalyptic millenarian groups	7	Pattani United Liberation Organization (PULO)	7	Foreign-based Sunni Jihadist unaffiliated cell
8	Extreme Right-Wing racist loner	8	Palestinian Islamic Jihad (PIJ)	8	Unidentified disgruntled scientist w/access (US-based)
9	Al-Takfir wa al-Hijra	9	Islami Chhatra Shibir (ICS)	9	Unidentified Shi'i Jihadist group (foreign-based)
10	Home-grown American group adhering to millenarian beliefs and practices (e.g. Christian Identity)	10	Free Aceh Movement (GAM)	10	Unidentified apocalyptic millenarian cult (US-based)
11	Pakistani neo-Taliban elements	11	Lashkar-e-Jhangvi (LeJ)	11	Unidentified Right-Wing group (incl. Christian Identity; militia movement; tax protesters; supremacists) (US-based)
12	Mentally unbalanced individuals	12	Hezbollah	12	US-based lone Sunni Jihadist
13	Severely disgruntled nuclear scientists	13	Taliban	13	US-based lone actor with a personal grudge or idiosyncratic motivation
14	Chechen jihadists			14	US-based unaffiliated cell from a New Religious Movement
15	Newly-emerging jihadist cells in West			15	US-based lone actor - Right-Wing
16	Chechen-like North Caucasus jihadists			16	US-based lone actor from a New Religious Movement
17	Jemaah Islamiyah				

Product : Indicators

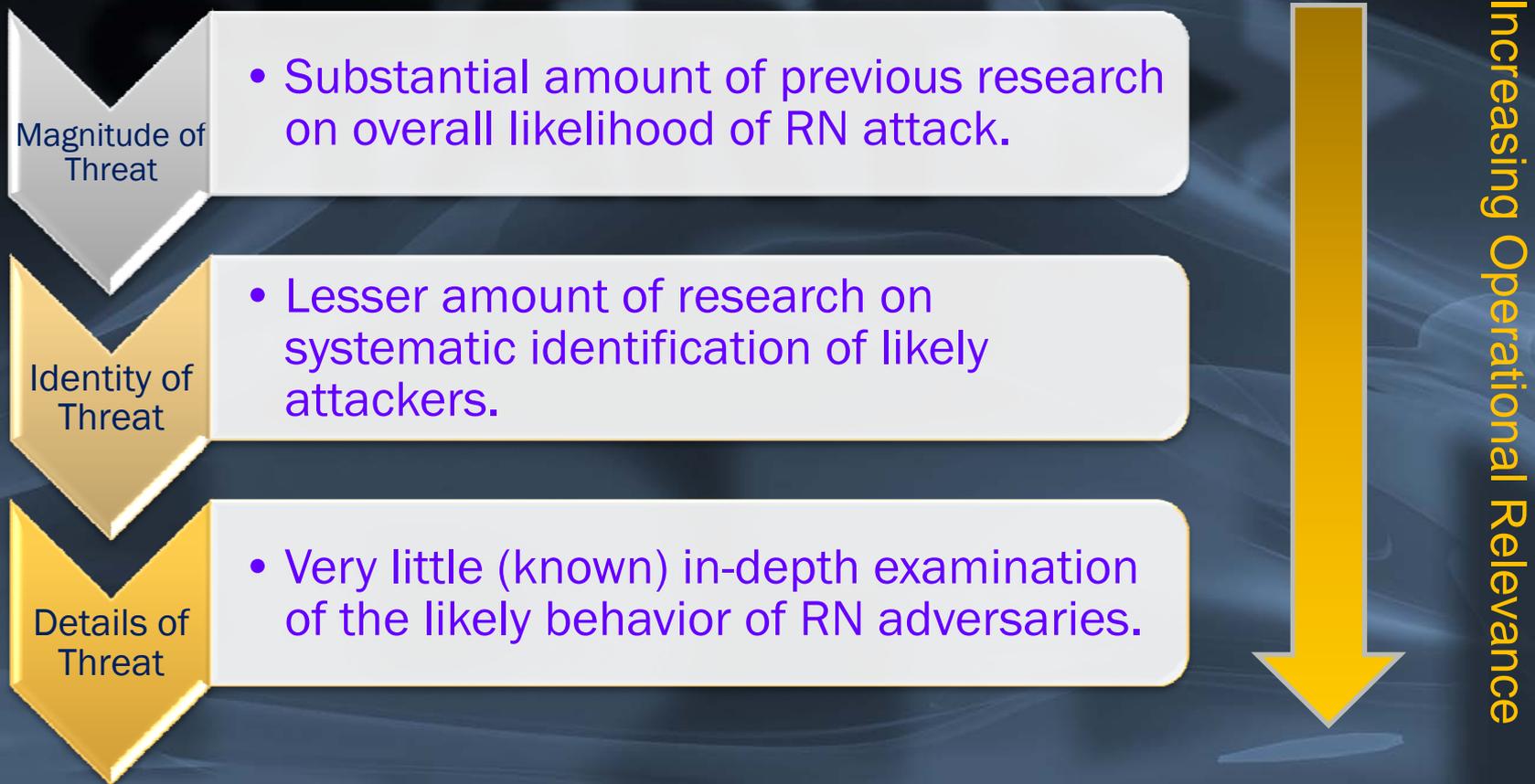
INDICATORS OF
RN THREATS

Positive Radiological Capability Indicator

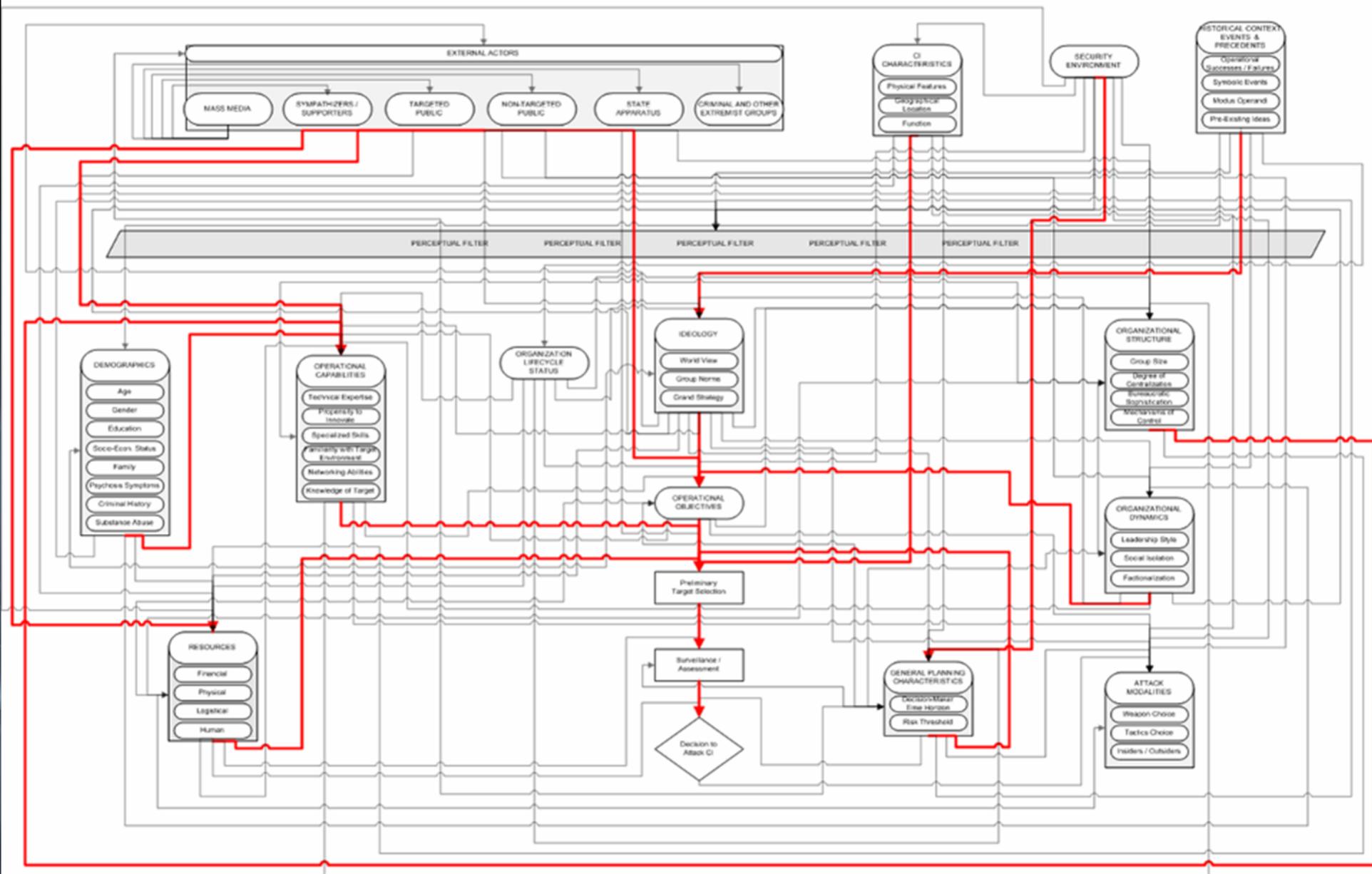
Groups having demonstrated the capability to consistently engage in tactically successful large-scale attacks utilizing multiple weapon types (e.g. a Beslan-scale attack [more than 30 well-trained attackers with automatic weapons, rocket-propelled grenades, and explosives, striking with warning])



Task 2: Analysis of RN Adversary Behavior



An academic perspective to complement existing intelligence estimates.



Influencing Factors

- A. Organizational Structure
- B. Ideology
- C. Historical Events of Significance
- D. Strategic Influences
- E. The Influence of Allies and Constituents
- F. Perceived Threats and Opportunities
- G. Major Attack Characteristics
- H. General Capabilities
 - Weapons
 - Finances
 - Human
 - Logistics
 - Tactics
- I. General Decision Making Characteristics

RN Behaviors of Interest

- Prior Involvement with RN Weapons
- RN Attack Decision Process
 - Who is likely to make the key attack decisions?
 - Will this reside in a single person or multiple people?
 - Will there be any predelegation of authority to attack?
 - Is there any order in which the attack planning is more likely to occur (e.g., weapon selection -> target selection -> acquisition plan -> ingress to target area or target selection -> ingress to target area -> weapon selection -> acquisition plan, etc.)?
 - Will they claim responsibility (post-attack) or issue warnings / threats (pre-attack)?
- Weapon Type Selection
 - Will the VNSA pursue radiological or nuclear weapons, or both?
 - Are they likely to pursue any particular RN material (e.g., uranium, cesium, americium)?
 - Will they seek to maximize / minimize casualties or is the number of casualties not the primary concern?
 - How are they likely to distribute the weapon (explosion, contamination of water supply, aerosol, etc.)?
 - Will the VNSA necessarily use the weapon against targets right away, or is it likely to (at least at first) employ the weapon for more indirect purposes, such as deterrence, coercion, or blackmail?
- Target Selection
 - What particular target or category of targets is the VNSA likely to select?
 - Are they likely to select densely populated or less densely populated targets?
 - Is the VNSA likely to select a specific location or physical structure with symbolic importance, or will targeting be more indiscriminate in nature?



RN Behaviors of Interest (cont.)

- **RN Acquisition**

- Is the VNSA more likely to attempt to acquire raw materials or an intact weapon?
- What are the likely source(s) of material for the VNSA? For example, do they have extensive connections to RN smuggling networks, insiders in government facilities, etc.?
- What resources (financial, human, physical) can they devote to acquisition?
- Where will the VNSA obtain the requisite knowledge to locate material, produce a device, or use the weapon?

- **Pre-attack Preparations**

- What are likely circumstances regarding any possible weapons production? Who? Where?
- What type of operational attack team is likely, especially in terms of number, expertise of members?
- How much and what type of target surveillance is likely?
- Where will weapons / materials be stored? For how long?
- What kinds of OPSEC is the VNSA likely to employ?

- **Ingress to / Egress from Target Area**

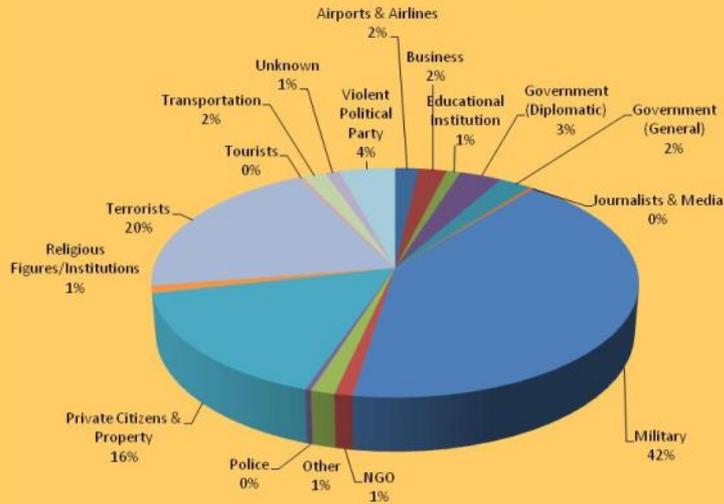
- How will the weapon / materials be transported to the target site? Includes both transnational crossings and movement within the United States.
- Will the attackers seek to escape after using the weapon?
- If post-attack escape is likely, how might they do this?

- **Miscellaneous Behaviors**

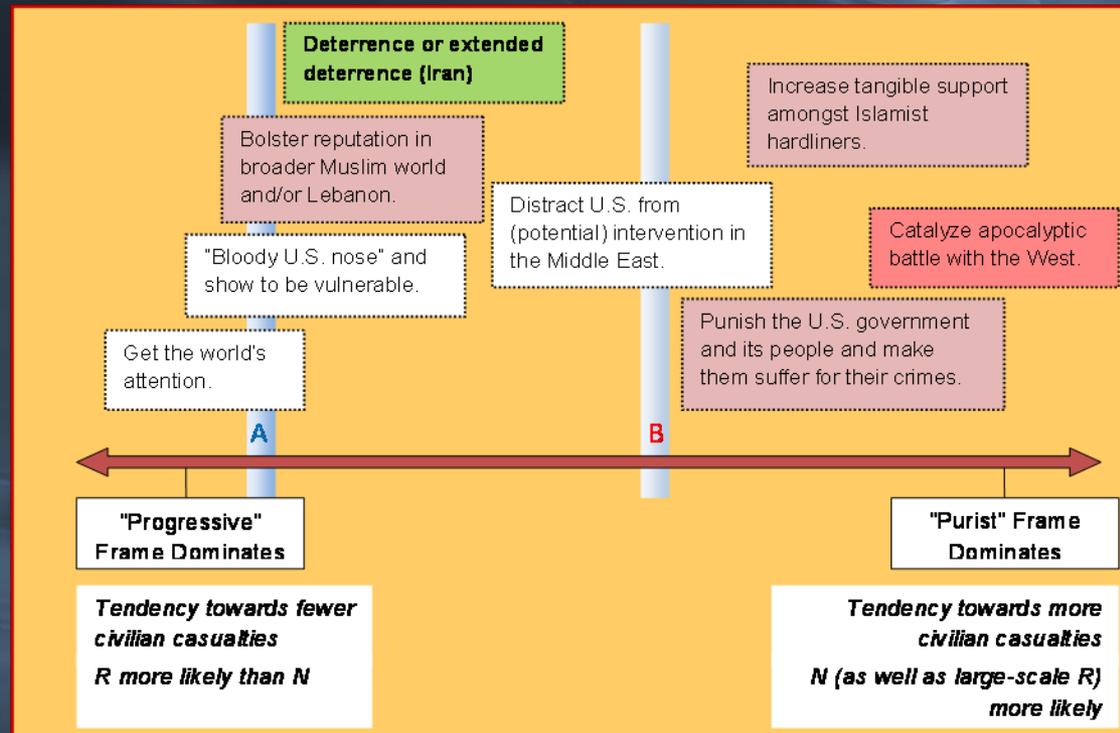


Hizballah

Figure IV:
Target Choices of Hizballah n=284



Possible Operational Objectives for a Hizballah RN Attack



START ➡➡

“Prediction is very difficult, especially about the future.”

Niels Bohr (1885 - 1962)

“For man does not even know his hour: like fish caught in a fatal net, like birds seized in a snare, so are men caught in the moment of disaster when it falls upon them suddenly.”

Ecclesiastes 9:12

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