



CBRN Terrorism: Motives and Malefactors

Gary Ackerman
Research Director, START



National Consortium for the
Study of Terrorism and Responses to Terrorism



A lot of hype....



...very little empirical analysis.



Why So Scary?

- Germs, chemicals and radiation are mostly invisible, invasive contaminants
- Unfamiliar to general public
- Natural human fear of contamination
- Powerlessness – how can I protect myself and my loved ones?
- Doubt – have I been exposed?



Foundations

**RISK = CONSEQUENCES OF CBRN ATTACK
X LIKELIHOOD OF CBRN ATTACK**

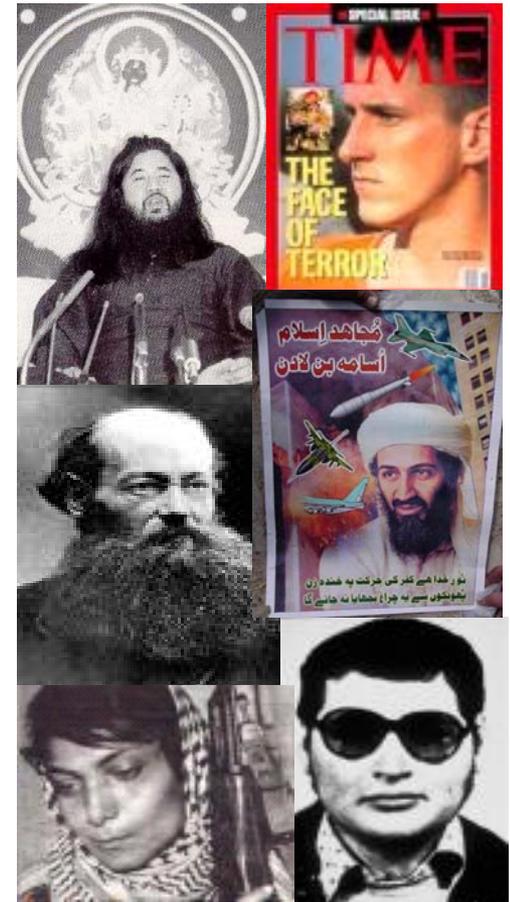
**LIKELIHOOD OF CBRN ATTACK:
MOTIVATION and CAPABILITY OF ATTACKER(S)**

**CBRN ATTACK ON THE CATASTROPHIC SCALE,
i.e. TRUE 'WMD'**



Estimating the Risk of CBRN Terrorism

- Fundamental impediments to predicting the actions of human beings:
 - Dynamic; adaptive behavior
 - Diversity of possibilities for action
 - Incomplete understanding of human intent
- Terrorism is a very EXTREME form of human behavior – compounds all these difficulties
 - Hyperdynamic
 - Resilient
 - Obscure motivations
- **OBVIOUS SPECIFIC PROBLEM:**
clandestine nature of terrorist activities – terrorists are generally unavailable for comment and once they become available, usually predicting their behavior is moot.





Estimating the Risk of CBRN Terrorism

- Most importantly...

The sample size for the large-scale use of CBRN by terrorists = 0



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

Niels Bohr (1885 - 1962)



Motivations for Using CBRN

- **Operational Motives**

- Cause massive casualties (punish the infidel; revenge)
- Exert disproportionate psychological impact (enemy gives in; fear; govt. impotence)
- Covert attack (biological; radiological)
- Contamination of vital locales (economic disruption)
- Deterrence
- Provoke spending on defense (economic attrition)

- **Ideological / Psychological Motives**

- Apocalyptic / millenarian worldview – to incite the “final war” between dar al-Harb and dar al-Islam
- Techno-fetishism
- Purification of sins through sacrificial acts (martyrdom)

- **Organizational Motives**

- Status relative to competitors (the “innovators”)
- “World Power” equal to the enemy
- Surfeit of resources: diversification



Current Expert Consensus on Motivations for CBRN

- Seems feasible but
 - Very little empirical basis for these conclusions.
 - The conclusions don't provide direct, discriminative policy guidance... this requires operationalizable findings.
 - They don't consider dynamics explicitly.



Estimating the Risk of CBRN Terrorism

Current approach:

- Examine statements and training materials “published” by terrorists (manifestos, CBRN manuals, etc.)
- Use proxy data (small-scale CBRN terrorism; CBRN plots; conventional attacks), especially historical cases
- Take into account changes in terrorist environment (CBRN technology, geopolitics, etc.)

...to determine the **IDENTITY** and **MOTIVATION** of CBRN Terrorists



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Al-Qa'ida & WMD

Acquiring weapons for the defense of Muslims is a religious duty. If I have indeed acquired these weapons [of mass destruction], then I thank God for enabling me to do so.

- Usama bin Laden, December 24, 1998





Jihadist CBRN Web Resources

- “Declaration of Jihad Against the Tyrants – Lesson Sixteen”
- Abu Hadhifa al-Shami, “A Course in Popular Poisons and Deadly Gases,” Islamic Media Center, *Mausu`a al-E`adad – The Preparation Encyclopedia*
- Abdel-Aziz, “The Mujahideen Poison Handbook,” February 7, 1996
- Ansar al-Qa`ida, “Encyclopedia of Poisons,” *Mausu`a al E`adad – The Preparation Encyclopedia*.
- “All That Relates to the Chemical Weapon (Mustard Gas) a Lot of Important and Rare Information for the First Time,” *al-Ma`asada al Jihadiya – The Jihadi Lion’s Den website*.
- “The Unique Invention: To Send the Atheric Killer to the Stubborn Infidels,” *al-Nusra Website*, April 2006.
- “The Biological Weapon,” *Mausu`a al E`adad - The Preparation Encyclopedia*.
- “The Nuclear Bomb,” *al-Khayma* (the Tent); “Documentation and Diagrams of the Atomic Bomb,” *Outlaw Labs* (No publication or posting date provided).
- Abu al-Usood al-Faqir, “Instances of Radiation Pollution from 1945-1987,” *al-Farouq*.
- “How to Build Your Own H-Bomb at Home,” *al-Ma`asada al Jihadiya – The Jihadi Lion’s Den website*, March 2005.
- Layth al-Islam, “Nuclear Preparation Encyclopedia,” *al-Firdaws*, October 2005.



Strategic Treatises

“The important thing is to disperse radioactive material in a large commercial area so the government is forced to shut down this area, which will cause this country massive economic disruption due to the following reasons:

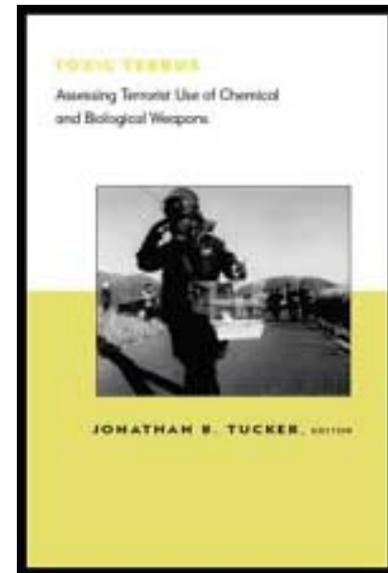
- The high costs of decontamination of radioactive areas.
- The high economic losses in this large commercial area due to closure.
- Subsequent unemployment and loss of jobs.
- Stoppage of general life in that area.
- Large compounded problems are to follow due to these losses.

Suggested cities: Las Vegas (the city of fornication and gambling that does not sleep) – New York – London – Sydney – Tokyo – Moscow – Other large tourist cities – and commercial capitals of all infidel nations.”



Historical Case Studies

- Sense of paranoia, grandiosity / defensive aggression
- Lack of political constituency
- Loner, or militant splinter group
- Isolation from society, e.g. closed cult
- Charismatic, violence-prone leader
- Apocalyptic ideology, cult of death
- Escalatory pattern of violence
- Technical and tactical innovation
- Fascination with poisons, plagues (CBRN fetishism)





Empirical Record: Incidents per Year

Year	Excluding Hoaxes	Hoaxes	Total
1999	53	76	129
2000	77	27	104
2001	68	239	307
2002	56	68	124
2003	54	41	95
2004	28	17	45
2005	37	32	69

Number of cases by Group Type

all	biological	chemical	combination	nuclear	radiological	unknown
Criminal Organization						10 2 %
Left-wing						36 7 %
Lone actor (s)						79 15 %
N/A						7 1 %
Nationalists / Separatists						100 18 %
Religious (cults)						40 7 %
Religious (fundamentalists)						54 10 %
Right-wing						26 5 %
Single-issue						33 6 %
Unknown						157 29 %
Total						542 100 %

Number of cases by Motive

all	biological	chemical	combination	nuclear	radiological	unknown
			False Case			1 0 %
			To Act Because of an Ideology/Belief System			162 30 %
			To Act on a Personal/Professional Grudge			15 3 %
			To Establish Ethno-Nationalist Sovereignty			98 18 %
			To Express Abortion-Related Sentiment			39 7 %
			To Extort Money/Pure Financial Gain			41 8 %
			To Fulfill Individualized Objective			43 8 %
			To Protest Treatment of Animals			9 2 %
			To Support Other Single-Issue			25 5 %
			Unknown			110 20 %
			Total			543 100 %



Mining the Historical Data –Asal and Ackerman (2006)

Organizations that have used or tried to use CBRN terrorism 1998-2005

Organization name	Used or pursued CBRN materials for terrorism 1998-2005
al-Qaeda	Pursued
Animal Liberation Front (ALF)	Pursued
Ansar al-Islam	Pursued
Armed Islamic Group	Pursued
Babbar Khalsa International (BKI)	Pursued
Basque Fatherland and Freedom	Used
East Turkistan Liberation Organization	Used
Ejercito del Pueblo en Armas (EPA)	Used
Hamas	Used
Hezbollah	Pursued
Jaish-e-Mohammad (JeM)	Pursued
Jamiat ul-Mujahedin (JuM)	Pursued
Jemaah Islamiya (JI)	Pursued
Kurdistan Workers' Party	Pursued
Lashkar-e-Jhangvi (LeJ)	Pursued
Lashkar-e-Taiba (LeT)	Used
Mujahedin-e-Khalq (MeK)	Pursued
Palestinian Islamic Jihad (PIJ)	Pursued
Real Irish Republican Army (RIRA)	Pursued
Revolutionary Armed Forces of Colombia	Used
Riyad us-Saliheyn Martyrs' Brigade	Used
Tawhid and Jihad	Pursued
UNITA	Pursued



Mining the Historical Data – Ackerman and Asal (2006)

Results of Maximum-Likelihood Ordinal Logit Estimation with CBRN pursuit or use (1998-2005) as the dependent variable

	Coef.	Std. Err.
Size (ordinal)	0.900**	0.295
Religious ideology	1.393*	0.549
Organizational age	0.028	0.016
Energy consumption per capita	0.123	0.113
State sponsorship	-0.364	0.710
POLITY2	-0.001	0.040

Number of observations 313

* Significant at .05 level.

** Significant at the .01 level.



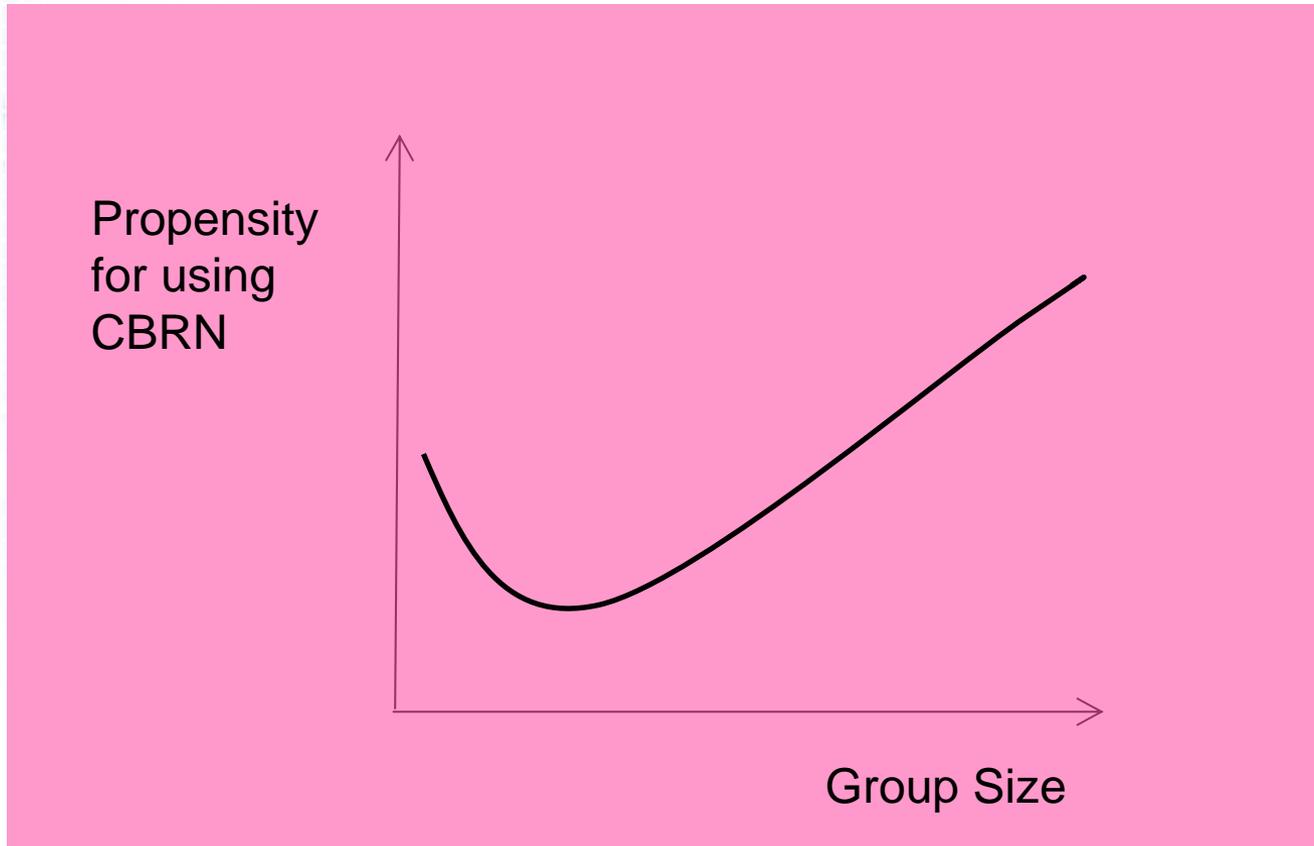
Mining the Historical Data – Ackerman and Asal (2006)

Probability of CBRN usage or pursuit when all other variables held at mean or mode (Ordinal Logit of CBRN pursuit or use 1998-2005)

		Size	Religious ideology
Minimum value	<i>No attempt</i>	0.98	0.98
	<i>Pursued</i>	0.01	0.01
	<i>Used</i>	0.01	0.01
Maximum value	<i>No attempt</i>	0.79	0.93
	<i>Pursued</i>	0.14	0.05
	<i>Used</i>	0.07	0.02



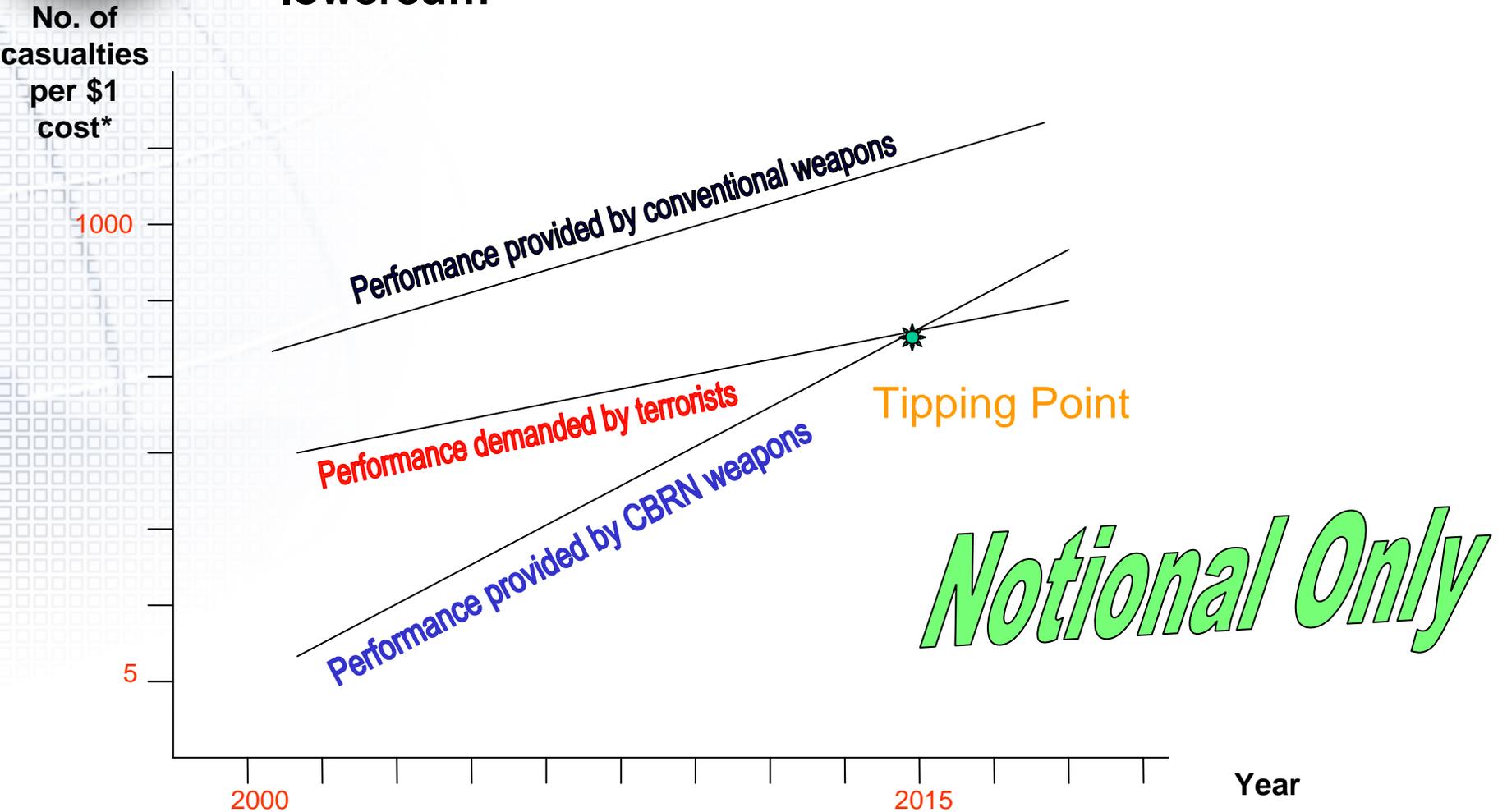
Hypothesized Relationship between Group Size and CBRN Weapons Use





The Future: More CBRN?

If costs associated with adopting new technology are lowered...





Possible suspects

Starting with most likely...

- Jihadists (Sunni or Shi'i)
- Apocalyptic cults
- Right-wing extremists
- Brutalized ethno-nationalists
- Radical environmentalists