

CBRN Activity and Attacks by Insurgent Organizations

BACKGROUND

To examine the factors that make an organization more likely to pursue a chemical, biological, radiological, or nuclear (CBRN) weapon or use a CBRN device, we conducted an analysis using the Big Allied and Dangerous Version 2.0 - Insurgent (BAAD2-I) dataset (Asal et al. 2015). BAAD2-I includes information on all “code-able” organizations (that is, entities that are clearly distinct, bounded in terms of their membership, and persistent across time) that appear for at least one year in the Uppsala Conflict Database Program (UCDP) dataset (Themnér and Wallensteen 2011) during the period 1998-2012. UCDP includes only those insurgent organizations that (1) engaged in battle with a government that (2) resulted in at least 25 battle deaths (3) during at least one year between 1998 and 2012. The BAAD2-I data was then married to variables (1) on terrorist incidents and fatalities drawn from the Global Terrorism Database (GTD), (2) on pursuit and use of chemical, biological, radiological, and nuclear capabilities and weapons drawn from the Profiles of Incidents Involving CBRN by Non-state Actors (POICN) dataset, and (3) on the nature and the “homebase” country of the state from the Quality of Government (QoG) dataset.

METHODOLOGY

The research team specifically looked at either pursuit or use of CBRN weapons and focused on organizational factors that might make this more or less likely. Because CBRN is rare for any organization, all count variables for CBRN pursuit or use were coded as “1” if the organization sought or actually used a CBRN weapon in a given year and “0” otherwise. Both standard and rare event logit models were estimated; the results were very similar. To more clearly disentangle causality, all independent variables were lagged by one year. We also included a lagged dependent variable to check for year-to-year correlation of activity. Robustness checks were done by leaving out country-level variables, fatalities, and pursuit/use in the previous year; the results were largely the same.

VARIABLES INCLUDED IN THE MODEL

- **Pursuit or use by an organization:** The organization was coded as having sought the capability to use a CBRN weapon or having actually used a CBRN weapon (based on data from START’s Profiles of Incidents Involving CBRN Use by Non-State Actors – POICN database).
- **Number of fatalities:** Number of persons killed by a given terrorist organization in a given year, as reported in the GTD.
- **Size of organization:** The number of members in the organization reported in orders of magnitude (0-9, 10-999, 100-999, 1,000-9,999, 10,000 or more).
- **Leftist ideology:** The organization promotes economically leftist policies such as redistribution of wealth by the government and nationalization of industry. Most organizations that fall into this category will primarily be communist and socialist organizations and their variants (Marxist, Leninist, Maoist).
- **Religious ideology:** The organization is guided by some set of religious principles. Such organizations may seek to incorporate religious policies into public life or exist to protect a distinct religious group.
- **Age:** Years since the organization was known to be founded, or years since first known mention in any media outlet, or years since first known attack – whichever occurred earliest.
- **Number of alliance connections:** An alliance connection is defined as when organizations are reported to have cooperated with one another.
- **Number of rivalry connections:** A rivalry connection is defined as when organizations compete for the same object or goal, or try to equal or outdo another organization, or use violence against one another. Rivals seek to dispute another’s preeminence or superiority.
- **Receives funding from a state:** Organization is known to have received financial, material, or other forms of support from a state.
- **Involved in drug trafficking:** Organization is known to have transported and/or sold drugs in order to generate revenue for the organization.
- **Controls territory:** Organization is able to control movement into, out of, or within a given territory. The territory must be a substantial area (city, region, etc.) and not just an organization occupying a few buildings. Additionally, the organization must have control over the land for more than a few days.
- **GDP per capita in “homebase” country:** Measure of economic activity in the homebase country.

ORGANIZATIONS

Organizations plotting, attacking or threatening with CBRN, 1998-2012

Al-Qasa Martyrs Brigade	Al-Qa'ida	Al-Qa'ida in the Arabian Peninsula
Al-Qa'ida in the Lands of the Islamic Maghreb	Ansar Al-Islam	Armed Islamic Group
Communist Party of India- Maoist*	Eastern Turkistan Islamic Movement	Hamas*
Hizballah	Islamic State of Iraq and al Sham*	Kurdistan Workers' Party
Liberation Tigers of Tamil Eelam*	Mujahedin-e Khalq	National Liberation Army of Colombia
National Union for the Total Independence of Angola	Oromo Liberation Front*	Palestinian Islamic Jihad
Popular Liberation Army*	Real Irish Republican Army	Revolutionary Armed Forces of Colombia*
Salafist Group for Preaching and Fighting	Taliban*	

* Designates organizations that used CBRN weapons in one or more attacks.

FINDINGS

- The organizations that are most likely to pursue a CBRN device are:
 - **Lethal** - lethal organizations are the most likely to pursue and use CBRN capabilities.
 - **Allied** - highly connected organizations engage in more CBRN development activity and more attacks.
 - **Based in wealthy countries** - organizations in more developed countries are more likely to seek a CBRN capability (but this does not affect actual use of a weapon).
 - No other factors have more than a 3 percentage point impact. Ideologies are either not significant or have extremely small effects - less than 1 percentage point (though positive).
- Chemical Weapons:
 - While more common than any other form of CBRN activity, the dataset includes only 59 incidents (1.73% of all organization-years) in which a group made any attempt to acquire or use a chemical weapon.
 - Lethality of the organization has by far the largest impact: The most lethal organizations are 99 percentage points more likely to engage in some form of chemical weapon activity.
 - Alliance counts also have substantial impact: moving from the smallest to largest value increase the probability of chemical activity by 32 percentage points for religious organization and 26 percentage points for Islamist organizations.
 - In contrast to CBRN use in general, rivalry counts have a small and uncertain effect on pursuit or use of chemical weapons.
- Biological Weapons
 - Alliance connections have a small positive impact
 - Other variables do not have consistent results across techniques and specifications
 - Rarity and unstable results suggests the need for new methods.

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