

## Understanding Counterterrorism Actions in a Globalized World

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The UTD program in risk assessment consisted of a series of projects. In two of the projects, game theory is used to better understand counterterrorism. In one project, we identify key factors – defensive cost comparisons among targeted countries, preemptive cost comparisons among targeted countries, relative foreign interests (e.g., residents, and investments abroad), and targeting risks – that determine counterterrorism allocations between preemptive and defensive policies when more than one country is targeted by the same terrorist threat. The second study focuses on the strategic interaction between a terrorist group and a government as both vie for grass-roots support. We show that there is a strategic regulator – previously unidentified – that curtails the level of violence as the appropriate adversary seizes the initiative and leads. When the terrorists have strong grass-roots support, the government is better off taking the initiative. When, instead, the terrorists have weak grass-roots support, the terrorists are better off seizing the initiative. In either scenario, leadership curtails violence and makes both the terrorists and the government better off. Both of these studies inform homeland security and the defense department about the proper mix of counterterrorism tools in various scenarios.

A third study applies statistical inferential procedures to ascertain the likely perpetrators of chemical, biological, radiological, and nuclear (CBRN) terrorist attacks, based on data on CBRN (chemical, biological, radiological, and nuclear terrorist) incidents, collected by the Monterey Institute of International Studies. In addition, we determine if past CBRN incidents are a determining factor of future attacks. There is a strong relationship. Religious cults and groups with a transnational orientation pose the largest CBRN threat to society. Other things constant, nationalists/separatists and religious fundamentalists are not more apt to engage in CBRN terrorism than compared to “other groups.” Democratic and corrupt regimes are the likely venues for CBRN incidents. Based on past incidents, rich countries are especially vulnerable to CBRN terrorism. Thus, recent actions by the U.S. Department of Homeland Security to put more resources into guarding against CBRN attacks appear sound. This study indicates that non-fundamentalist terrorists also present CBRN risks to democracies. From a foreign policy viewpoint, CBRN terrorism is not a problem that rich democratic countries can confront alone, because the terrorists will move to where there is the least vigilance. Our study indicates the likely perpetrators and types of attacks that nations must cooperate to avoid.

A fourth pedagogical paper, “Applying Analytical Methods to the Study of Terrorism,” was written to be used in classrooms to train students in the methods that can be used to forecast and analyze terrorism.

The counterterrorism studies are of relevancy for the US government in determining the proper mix between protective and defensive policies. The CBRN study is relevant to DHS in assessing the likely threat of chemical, biological, radiological, and nuclear attack, based on a database of past incidents. The identification of rich democracies as a likely venue justifies DHS bioshield and other programs. Also, the study’s identification of the likely perpetrators of such attacks is helpful to law enforcement. The pedagogical paper is relevant to DHS personnel who want to know how advance theoretical and empirical methods are of use in the study of terrorism. This study is also useful to anyone who is pursuing a career in agencies dealing with terrorism.

The methodologies developed in the game theory papers can be applied to a wide-range of counterterrorism issues and concerns. Also, our empirical exercise with respect to CBRN attacks can be used to understand other types of terrorist threats.

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