

Project 1: Understanding Counterterrorism Actions in a Globalized World (Sandler)

The project investigates the best choice between proactive and defensive counterterrorism policies when multiple countries face a common terrorism threat.

Modeling Area: Risk Analysis

Application Area: Intelligence and Analysis

Principal Investigator: Todd Sandler

Institution: University of Texas at Dallas

Other Investigators: Kevin Siqueira, Subhayu Bandyopadhyay, Kate Ivanova

Brief Description:

The project consists of three studies. The first study is a theoretical study that investigates the interplay between alternative counterterrorism policies. A two-stage game depiction of counterterrorism is presented, where the emphasis is on the interaction between preemptive and defensive measures taken by two targeted countries that confront a common threat. The analysis will 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. 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. The primary purpose of the third study is to apply statistical inferential procedures to ascertain the likely perpetrators of chemical, biological, radiological, and nuclear (CBRN) terrorist attacks, based on data on CBRN incidents, collected by the Monterey Institute of International Studies. In addition, we will determine if past CBRN incidents are a determining factor of future attacks.

Objectives and Technical Approach:

The primary goal of this project is to display the interplay of alternative counterterrorism policies so that policymakers can better choose their mix of defensive and proactive responses against a common transnational terrorist threat. A secondary goal is to investigate proactive countermeasures when terrorists can be supported by outside sponsors. A third goal is to empirically identify the drivers of the threat of chemical, biological, radiological, and nuclear terrorist incidents, based upon past events. Game theory is used for the first two papers. Empirical regression analysis is used for the project about the perpetrators of chemical, biological, radiological, and nuclear attacks.

Major Products:

The project will yield three articles intended for publication in refereed journals. These articles should be of interest to government policymakers interested in allocating a homeland security budget among alternative proactive and defensive policies.

Major Milestones and Dates:

“Terrorists versus the Government: Strategic Interaction, Support, and Sponsorship,” (study no. 2 with Kevin Siqueira) completed and scheduled to appear in *Journal of Conflict Resolution*, Vol. 50, No. 6, December 2006. Completed.

“The Interplay between Preemptive and Defensive Counterterrorism Measures: A Two-Stage Game,” (study no. 1 with Subhayu Bandyopadhyay) is being revised for submission in the next couple of months.

“CBRN Attack Perpetrators: An Empirical Study,” (study no. 3 with Kate Ivanova) is current under review at a journal. Revisions will be done once we hear from the journal.