Parametric and Non-Parametric Bayesian Inferences for Counterterrorism Policy

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Abstract:

The concept of war has changed markedly over the course of the last several decades. No longer are we faced with the traditional type of armed conflict with armies representing nation-states at war but instead we typically face guerrilla-style conflicts involving terrorism, endangering civilians as well as soldiers. For decades, understanding how to fight terrorists in this inherently different type of war has been a question vexing policymakers throughout the world.

In this chapter, we used *R* to rigorously analyze terrorist attack data from four major conflicts across the globe - from Afghanistan, Iraq, Sri Lanka, and Northern Ireland - to help policymakers answer this very question. We utilize both parametric and non-parametric Bayesian logistic regression techniques to do so, improving on existing methodologies to estimate Bayesian credible regions in the process. For parametric Bayesian regression we utilized the **R2WinBUGS** package and for non-parametric regression we utilized the **DPPackage** package. Our work helps shed light on the factors that influence the success of terrorist attacks, providing policymakers with advice about how to more effectively combat this very dangerous enemy.