Lauren Courtney

Data Visualization

April, 2020

**Literature Survey**

**Introduction**

My research topic is “How has terrorism changed over time?”. In search of an answer to this question I will use the Global Terrorism Database compiled by the University of Maryland. For my references, I sought to find information to first further explain my database. Two of my references come directly from the creators of this database: one explaining how it was compiled and giving important context to each of the fields, and the other explaining overarching results and trends that are seen in the data. I would like to include analysis about effectiveness of counter-terrorism policies in my analysis, as I hypothesize this will factor heavily into changes over time, so I sought out a paper that had similar goals to get a framework for that kind of analysis. Finally, as the focus of the paper and project is to showcase the visualization techniques we have learned this semester, I looked for a reference that had tackled the challenge of displaying a complicated database like the GTD, and found excellent analysis of the best ways to visualize this multivariate data. These references will help me give my paper a solid background, assist me in answering my research question, and guide me to create highly effective visualizations.

**1. Building A Global Terrorism Database** <https://www.ojp.gov/pdffiles1/nij/grants/214260.pdf>

This reference describes the motivation and methodology for compilation of the Global Terrorism Database that will be used in this project. The database one of the world’s most comprehensive records of global terrorism, and this reference focuses on how this data was compiled and the criteria used to define terrorism and the different attack types. It also outlines the primary strengths and weaknesses of the database. Most importantly, it gives a detailed description of each field in the database. This reference will factor heavily in the background sections of my paper, and will be important in proper processing of the features in the database.

Dugan, L., Fogg, H. V., La Free, G., & Scott, J. (2006). *Building a global terrorism database* National Criminal Justice Reference Service. Retrieved from [http://proxy.library.jhu.edu/login?url=https://www.proquest.com/books/building-global- terrorism-database/docview/58768381/se-2?accountid=11752](http://proxy.library.jhu.edu/login?url=https://www.proquest.com/books/building-global-%09terrorism-database/docview/58768381/se-2?accountid=11752)

**2. Results from the Global Terrorism Database** <https://link.springer.com/content/pdf/10.1007%2F978-1-4614-0953-3_3.pdf>

This reference summarizes results from the Global Terrorism Database as of 2012. It provides visualizations of trends in attack frequency over time as well as per country. It covers the most active terrorist organizations, target types, tactics, and weapons. It describes major conclusions and trends that could be derived from the database as of 2012. This analysis is all along the same lines that I wish to cover in my paper, so the methodology and conclusions in this reference are all quite relevant.

LaFree G. (2012) Generating Terrorism Event Databases: Results from the Global Terrorism Database, 1970 to 2008. In: Lum C., Kennedy L. (eds) Evidence-Based Counterterrorism Policy. Springer Series on Evidence-Based Crime Policy, vol 3. Springer, New York, NY. https://doi.org/10.1007/978-1-4614-0953-3\_3

**3. The Effectiveness of Counter-Terrorism Interventions:** <https://www.aic.gov.au/sites/default/files/2020-05/tandi475.pdf>

This reference attempts to model the effectiveness of direct responses to terrorism attacks (such as arrests) in Indonesia, Thailand, and the Philippines over a 7 year period using data collected from the Global Terrorism Database. It merges data on interventions from the Counter-Terrorism intelligent Library with the terrorism data and creates visualizations of interventions vs. terrorism attacks, as well as using a mathematical model similar to a predator-prey model to show the relationship between interventions and terrorist attacks. This reference is an interesting example of potential ways to visualize the data, and shows a direct relationship between interventions and attacks that I will look for in my analysis.

White, G., Mazerolle, L., Porter, M. D., & Chalk, P. (2014). *Modelling the effectiveness of counter- terrorism interventions* Australian Institute of Criminology. Retrieved from <http://proxy.library.jhu.edu/login?url=https://www.proquest.com/books/modelling-> effectiveness-counter-terrorism/docview/1735644982/se-2?accountid=11752

**4. Visualizing Patterns in a Global Terrorism Incident Database** <https://journals.sagepub.com/doi/pdf/10.1068/b3305>

This reference focuses on the difficulties in visualizing such a large and complex dataset as one of global terrorism incidents, and offers a method of space-time and multivariate visualizations to solve the problem. It outlines the visualization process including the geo-encoding and transformation of the data into a “data cube” which allows user to specify two of the three dimensions in which to display the data. It then presents a few different visualization dashboards that show different ways of displaying this multivariate data. This reference is excellent in generating ideas for how to best present this terrorism data and brings up important questions about how to present the different features concurrently.

Guo D, Liao K, Morgan M. Visualizing Patterns in a Global Terrorism Incident Database. *Environment and Planning B: Planning and Design*. 2007;34(5):767-784. doi:[10.1068/b3305](https://doi.org/10.1068/b3305)