A First Look at Domestic and International Global Terrorism Events, 1970–1997

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Abstract. While the study of terrorism has expanded dramatically since the 1970s, most analyses are limited to qualitative case studies or quantitative analyses of international incidents only—which comprise a very small proportion of all terrorist events. Until now, empirical data on both domestic and international terrorist events have not existed. We have compiled information from more than 69,000 terrorism global incidents from 1970 to 1997. Most of these data were originally collected from a private intelligence service agency using open-source data. Since we completed coding the original data in 2005, we have been continually updating and validating the data and we now call the Global Terrorism Database (GTD). We begin this paper by describing the data collection efforts and the strengths and weaknesses of relying on open-source data. We then summarize completed research projects and end by listing on-going efforts to better understand the dynamics of world-wide terrorism events.

1 Introduction

Although the research literature on terrorism has expanded dramatically since the 1970s, the number of studies based on systematic empirical analysis is surprisingly limited. One of the main reasons for this lack of cutting-edge empirical analysis on terrorism is the low quality of available statistical data. To remedy this, we coded and verified a previously unavailable data set composed of 67,165 terrorist events recorded for the entire world from 1970 to 1997. This unique database was originally collected by the Pinkerton Global Intelligence Service (PGIS).

Because the PGIS database was designed to document every known terrorist event across countries over time, we can examine the total number of different types of terrorist events by specific date and geographical region. To the best of our knowledge this is the most comprehensive open source data set on terrorism that has ever been available to researchers. PGIS trained their employees to identify and code terrorism incidents from a variety of sources, including wire services (especially Reuters and the Foreign Broadcast Information Service), U.S. State Department reports, other U.S. and foreign government reports, U.S. and foreign newspapers, information provided by PGIS offices around the world, occasional inputs from such special interests as organized political opposition groups, and data furnished by PGIS clients and other individuals in both official and private capacities.

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While this is the only database of this sort, it has both strengths and weaknesses which are reviewed below. Strengths include its broad definition of terrorism and its longitudinal structure. Weaknesses of the database include potential media bias and misinformation, lack of information beyond incident specific details alone, and missing data from lost cards (data for the year 1993 were lost by PGIS in an office move). Finally, as we discovered cases that were missing from PGIS, we added them to the data and changed the name from PGIS to the Global Terrorism Database (GTD).

2 Building a Global Terrorism Database

Although the research literature on terrorism has expanded dramatically since the 1970s (for reviews, see [1], [13], [16], [18]), the number of studies based on systematic empirical analysis is surprisingly limited. In their encyclopedic review of political terrorism, Schmid and Jongman [19:177] identify more than 6,000 published works but point out that much of the research is "impressionistic, superficial (and offers) … far-reaching generalizations on the basis of episodal evidence."

One of the main reasons for this lack of cutting-edge empirical analysis on terrorism is the low quality of available statistical data. While several organizations now maintain databases on terrorist incidents,[1] these data sources face at least three serious limitations. First, most of the existing data sources use extremely narrow definitions of terrorism. For example, although the U.S. State Department [21:3] provides what is probably the most widely-cited data set on terrorism currently available, the State Department definition of terrorism is limited to "politically motivated violence" and thus excludes terrorist acts that are instead motivated by religious, economic, or social goals.

Second, because much of the data on terrorism is collected by government entities, definitions and counting rules are inevitably influenced by political considerations. Thus, the U.S. State Department did not count as terrorism actions taken by the Contras in Nicaragua. By contrast, after the 1972 Munich Olympics massacre in which eleven Israeli athletes were killed, representatives from a group of Arab, African and Asian nations successfully derailed United Nations action by arguing that "people who struggle to liberate themselves from foreign oppression and exploitation have the right to use all methods at their disposal, including force" [8:31].

And finally and most importantly, even though instances of domestic terrorism[2] greatly outnumber instances of international terrorism, domestic terrorism is excluded from all existing publicly available databases. In short, maintaining an artificial separation between domestic and international terrorist events impedes full understanding of terrorism and ultimately weakens counterterrorism efforts.

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[1] These include the U.S. State Department [23], the Jaffee Center for Strategic Studies in Tel Aviv [6], the RAND Corporation [9], the ITERATE database[13], [14], and the Monterey Institute of International Studies [20].

[2] We use the term "domestic terrorism" throughout to signify terrorism where the perpetrator and target were nationals from the same country and the attack was perpetrated within the boundaries of their country.

3 The Original PGIS Database

To address this lack of empirical data, we coded and verified a previously unavailable data set composed of 67,165 terrorist events recorded for the entire world from 1970 to 1997. This unique database was originally collected by the Pinkerton Global Intelligence Service (PGIS). The collectors of the PGIS database aimed to record every major known terrorist event across nations and over time. This format allows us to examine the total number of different types of terrorist events by date and by geographical region. The database contains nine unique event types; seven of which were defined *a priori* by PGIS, including bombing, assassination, facility attack, hijacking, kidnapping, assault, and maiming. PGIS later added two categories, arson and mass disruption, to fit unique cases they found during data collection.

To the best of our knowledge this is the most comprehensive open source data set on terrorism events that has ever been available to researchers. There are at least four main reasons for this. First, unlike most other databases on terrorism, the PGIS data include political, as well as religious, economic, and social acts of terrorism. Second, because the PGIS data were collected by a private business rather than a government entity, the data collectors were under no pressure to exclude some terrorist acts because of political considerations. Third, unlike any other publicly available database the PGIS data includes both instances of domestic and international terrorism starting from 1970. And finally, the PGIS data collection efforts are remarkable in that they were able to develop and apply a similar data collection strategy for a 28-year period.

4 Evaluating the PGIS Data

Although every effort was made, from data entry eligibility requirements and applicant screening to extensive data verification and cleaning, to ensure that our coding of the PGIS data was as complete and accurate as possible, nevertheless, the resulting database has both strengths and weakness—many of which were beyond our control. Strengths of the database include its broad definition of terrorism and its longitudinal structure. Weaknesses of the database include potential media bias and misinformation, lack of information beyond incident specific details alone, and missing data from a set of cards that were lost during an office move of PGIS. We review some of these strengths and weaknesses in the next section of this report.

4.1 Database Strengths

In reviewing our work on these data since 2002, we believe that the database has four major strengths. First, the PGIS data are unique in that they included domestic as well as international terrorist events from the beginning of data collection. This is the major reason why the PGIS data set is so much larger than any other currently available open source databases. In a review, Alex Schmid [18] identified 9 major databases that count terrorist events, and reports that each of these databases contains less than 15 percent of the number of incidents included in the PGIS data. Second, PGIS had an unusually sustained and cohesive data collection effort. Thus, the PGIS

data collection efforts were supervised by only two main managers over the 27 years spanned by the data collection effort. We believe that this contributes to the reliability of the PGIS data. Third, we feel that there are advantages in the fact that the PGIS data were collected not be a government entity but by a private business enterprise. This meant that PGIS was under few political pressures in terms of how it classified the data being collected. And finally, the definition of terrorism employed by the original PGIS data collectors was exceptionally broad. Definitions of terrorism are a complex issue for researchers in this area.

A major reason that we were drawn to the PGIS data is that the definition of terrorism it employed throughout the data collection period is especially inclusive, "…the threatened or actual use of illegal force and violence to attain a political, economic, religious or social goal through fear, coercion or intimidation." Where the U.S. State Department defines terrorism as "…premeditated, politically motivated violence perpetrated against noncombatants targeted by subnational groups or clandestine agents, usually intended to influence an audience." Unlike the State Department, whose mandate is to focus on international terrorism (i.e., that involving the interests and/or nationals of more than one country), the PGIS data are not limited to international incidents. To underscore the importance of this difference consider that two of the most noteworthy terrorist events of the 1990s—the March 1995 nerve gas attack on the Tokyo subway system and the April 1995 bombing of the federal office building in Oklahoma City, both lack any known foreign involvement and hence were purely acts of domestic terrorism.

Based on coding rules originally developed in 1970, the persons responsible for collecting the PGIS database sought to exclude criminal acts that appeared to be devoid of any political or ideological motivation and also acts arising from open combat between opposing armed forces, both regular and irregular. The data coders also excluded actions taken by governments in the legitimate exercise of their authority, even when such actions were denounced by domestic and/or foreign critics as acts of "state terrorism." However, they included violent acts that were not officially sanctioned by government, even in cases where many observers believed that the government was openly tolerating the violent actions.

In sum, we regard the fact that these data were collected by a private corporation for a business purpose as an important advantage over other data sets currently available. Because the goal of the data collection was to provide risk assessment to corporate customers, the database was designed to err on the side of inclusiveness. While there is at present no universally accepted definition of terrorism, the definition used to generate the PGIS data is among the most comprehensive that we have been able to identify.

4.2 Weaknesses of Open Source Terrorism Databases

But while the PGIS data has some important strengths, we also recognize that it also has important weaknesses that need to be understood when drawing conclusions from the data. Three types of weaknesses are especially important. First, all the major open source terrorism databases (ITERATE, MIPT-RAND and PGIS) rely on data culled from news sources, thus they are likely biased toward the most newsworthy forms of terrorism [6]. Although the PGIS database includes events that were prevented by

authorities, it is certain that some potential terrorist attacks never came to the attention of the media and are thus excluded. A related issue is that the PGIS database includes incidents covered by the media where the perpetrator remains unidentified. Without information concerning the perpetrator it may be difficult to accurately classify the incident as terrorism, since the definition relies on the motive of the attacker. Finally, various media accounts of similar terrorist incidents may contain conflicting information. Without measures of reliability in news reporting, it is difficult for researchers to discern which source supplies the most accurate account.

The second issue is that the dataset lacks information on other important issues associated with each terrorism incident. Open source databases, including the one created by PGIS also lack information on the "psychological characteristics, recruitment, and careers of members of terrorist movements" [9:28]. There are also no "broadly-based data sets with coded information on the outcome of terrorist campaigns or on government responses to episodes of domestic terrorism" [9:28]. Of course, the lack of data on terrorist groups is mainly explained by their clandestine nature. The media also tends to focus on terrorism employed by non-governmental insurgents rather than state terrorism. Overall, the reason for the large quantity of information on the characteristics of sub-state terrorism incidents is because this information is more readily available from media sources. Thus, it is important to recognize that the data captured in open source terrorism databases are limited and are appropriate for only certain types of studies.

Finally, for unknown reasons, most of the original data for the year 1993 were lost prior to our acquiring the dataset. We are currently working to replace that missing data. Also, during the process of verifying the PGIS data with other sources, we found that PGIS were unsystematically missing some cases. When the source of missing information was deemed reliable, we added the incident to PGIS and documented the original source. Because this changes the database, and because Pinkerton's corporate offices are no longer affiliated with the data, we changed the name from PGIS to the Global Terrorism Database (GTD).

5 A First Look at International and Domestic Global Terrorism, 1970 – 1997

Now we present an overview of international and domestic terrorism worldwide. Between 1970 and 1997 (excluding 1993), the GTD records 69,088 terrorism incidents[3]. Figure 1 contrasts the pattern of terrorism according to GTD with that of RAND, which only includes international incidents. Most striking is the vast difference in magnitude between the two data bases. If we were to exclusively focus on international terrorism, we would miss information on more than 61,000 incidents. In fact, as we shall see later, many groups began by attacking targets within their own country before expanding to international terrorism.

[3] This figure is based on the available GTD as of February 17, 2006. Since the database is continuously evolving, the numbers may change over time as new sources are integrated into the existing database.

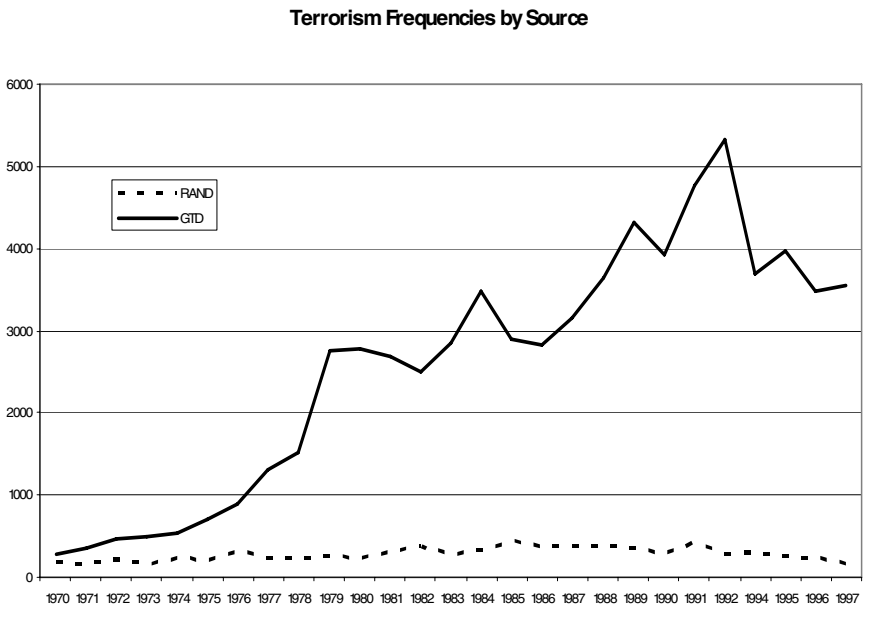

Fig. 1. Terrorism Trends over Time According to RAND and GTD

Looking exclusively at the pattern of terrorism from the GTD, we see that terrorism had increased rather steadily to a peak in 1992 with 5,324 events worldwide. Up through 1976 attacks by terrorist attacks were relatively infrequent, with fewer than 1,000 incidents each year. In 1977, incidents rose from 885 to 1,306. From 1978 to 1979 we see evidence that events nearly doubled rising to 2,745 from 1,526. The number of terrorist events continues a broad increase until 1992, with smaller peaks in 1984, at almost 3,500 incidents, and 1989, with about 4,300 events. After the global peak in 1992, the number of terrorist incidents declines to approximately 3,500 incidents at the end of the data collection period in 1997.

To better understand the distribution of terrorism events and lethality, we calculated the distribution of incidents and fatalities according to their region.[4] Figure 2 shows that more terrorism and terrorism-related fatalities occur in Latin America than in any other region. In fact, Latin America is attacked nearly twice as often as any other region of the world more than seven times as often as Sub-Sahara Africa and nearly forty times that of North America.[5] Europe and Asia are nearly tied at second, each accounting for about 20 percent of the world's total terrorism events (21.03 and 18.14 percent, respectively). The Mid-East/North Africa region follows with less than 15 percent (13.14) of the incidents, and Sub-Saharan Africa and North America account for the fewest terrorism events (5.79 and 1.68 percent, respectively).

[4] The composition of countries within each region was determined by PGIS.
[5] Mexico is counted as Latin America instead of North America.

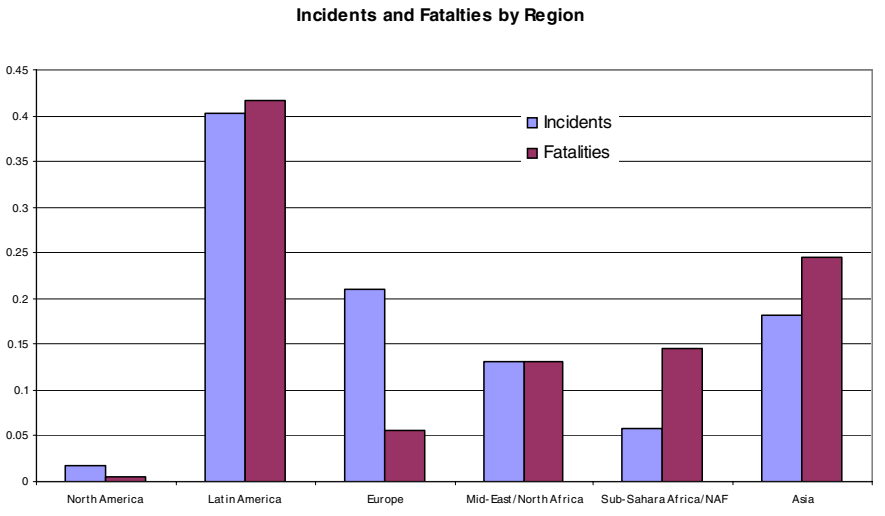

Fig. 2. Incidents and Fatalities by Region

Figure 2 also shows that the distribution of fatalities by region differs from that of the incidents. While Latin America remains the leader in fatalities as well as in the proportion of attacks, Asia has the second highest percentage of fatalities by region, accounting for nearly 25 percent of all terrorism-related fatalities (24.56). Figure 2 also reveals that while Europe is second in the proportion of attacks, it suffers relatively few fatalities as a result of these incidents, averaging only 0.53 deaths per incident (See Table 1). This rate is especially low compared to that for Sub-Saharan Africa which averages 5 deaths for every terrorism attack. Thus, while the Sub-Saharan African region accounts for a relatively small proportion of total terrorist attacks during this period, when there were attacks in this region, they tended to be deadlier. The reasons for these differences remain to be explained, although part of the explanation may simply be ready and proximate access to medical care across regions.

Table 1. The Average Number of Fatalties per Terrorism Attack

Region	Fatalities per Attack
North America	0.55
Latin America	2.06
Europe	0.53
Mid-East, North Africa	2.00
Sub-Saharan Africa	5.00
Asia	2.70

We turn now to the distribution of terrorism activity for each region over time. Figure 3 disaggregates the trend line of Figure 1 to show which regions are driving each portion of the trend from 1970 through 1997. If we were to examine this graph from 1970 until 1978, the story would be that terrorism is largely a European problem, with evidence of it becoming a growing issue in Latin America. After 1978, Europe peaks at over 1,000 incident in 1979 and then drops to an average of 550 incidents a year. Latin America, on the other hand continues rise after 1978 and peaks in 1984 with over 2,100 incidents. After 1984, Latin America continues to average about 1,400 a year with large fluctuations. Most interesting is the fairly steep drop that bottoms out in 1995 at 515 incidents. The steady increase in the overall world-wide terrorism rates are driven by the relatively recent increase in the frequency of attacks in Asia and Sub-Saharan Africa. Figure 3 also shows that compared to other regions, North America has experienced a relatively small proportion of terrorist attacks during this period.

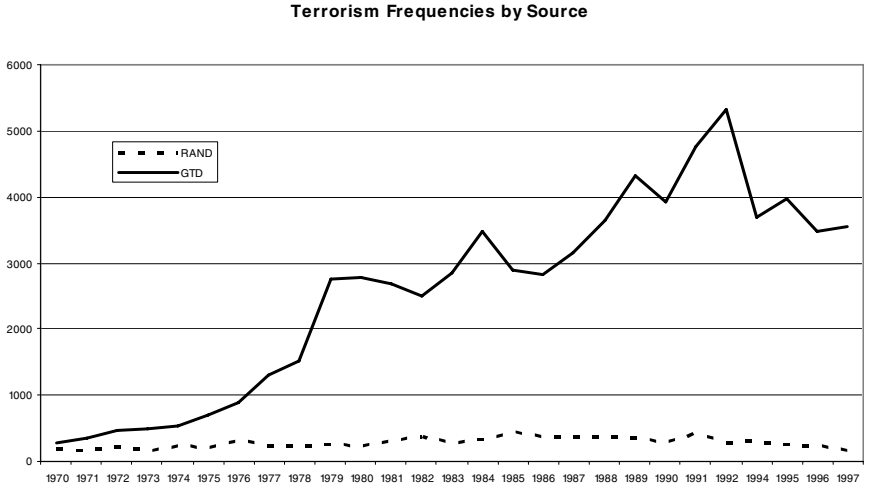

Fig. 3. Terrorism Activity over Time by Region

Not only does the GTD provide information about the frequency of attacks, but it allows us to examine the distribution of terrorist tactics. In an analysis not shown, we examine the types of terrorist tactics by region. While the five most common tactics (i.e., assassinations, bombing, facility attacks, hijacking and kidnapping) were relatively common in all six regions, there were substantial differences in the distribution of terrorist tactics.

Theses patterns may be partly due to risk management strategies. Since the GTD documents each incident we can aggregate to any level. We demonstrate the value of examining sub-national patterns in the next two figures. In figures 4 and 5, we disaggregate the trend by the most active groups. We also include the trend line for incidents where the perpetrating group is unrecorded. This comparison in Figure 4

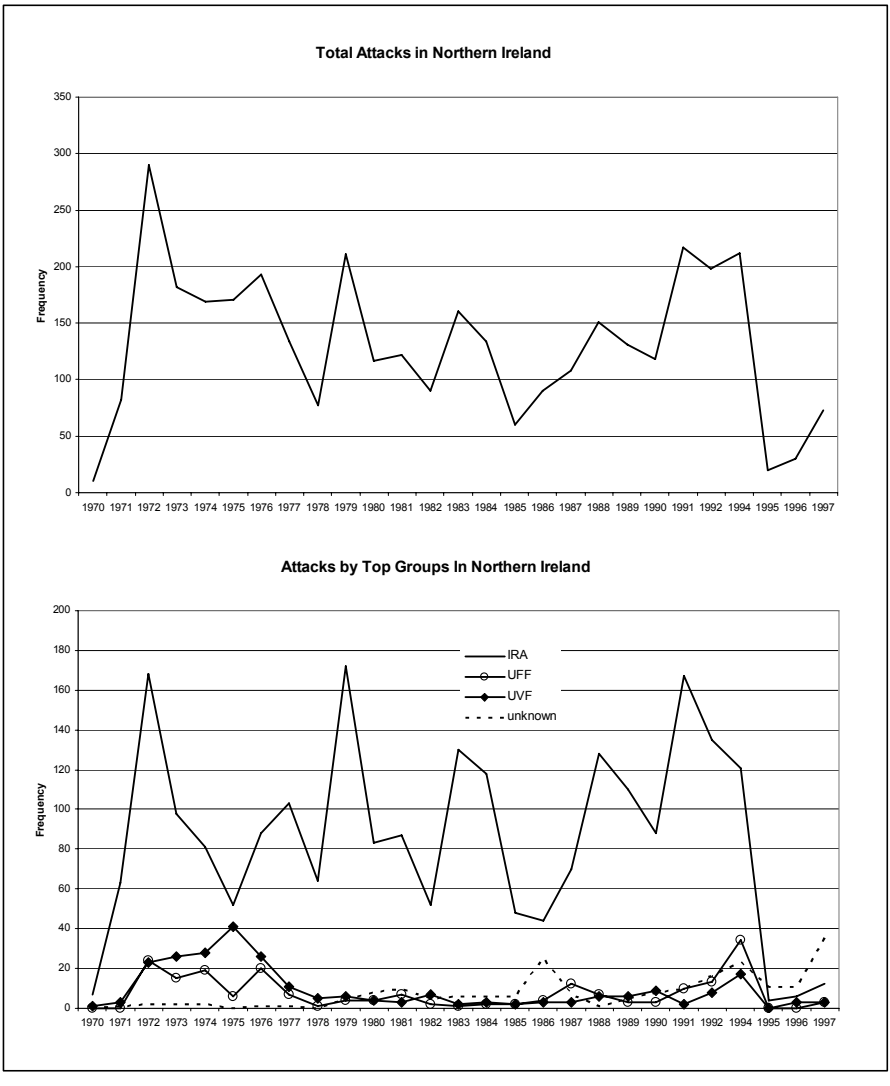

Fig. 4. Terrorist Attacks over Time in Northern Ireland for Select Groups

demonstrates that the pattern of terrorism in Northern Ireland is largely driven by the activities of the Irish Republican Army (IRA). Peak years for the IRA were 1972, 1979, 1983, 1988, and 1991, which form the peaks for terrorism in Northern Ireland overall. The two second most active groups, the Ulster Freedom Fighters (UFF) and the Ulster Volunteer Force (UVF) have demonstratively lower rates of attack (totals equal 203 and 251, respectively compared to 2,299 for the IRA).

Figure 5 presents the trends for four groups in the United States as well as that for events where no group claims responsibility. Aside from events perpetrated by an unknown group, most of the U.S. terrorism trends appear to be accounted for by the

anti-abortion activists, the Armed Forces of Puerto Rican National Liberation (FALN), the New World Liberation Front (NWLF), and the Jewish Defense League (JDL). Attacks by FALN, NWLF, and JDL were most common between 1970 and 1980. Since then, most activity seems to be driven by the anti-abortion movement.

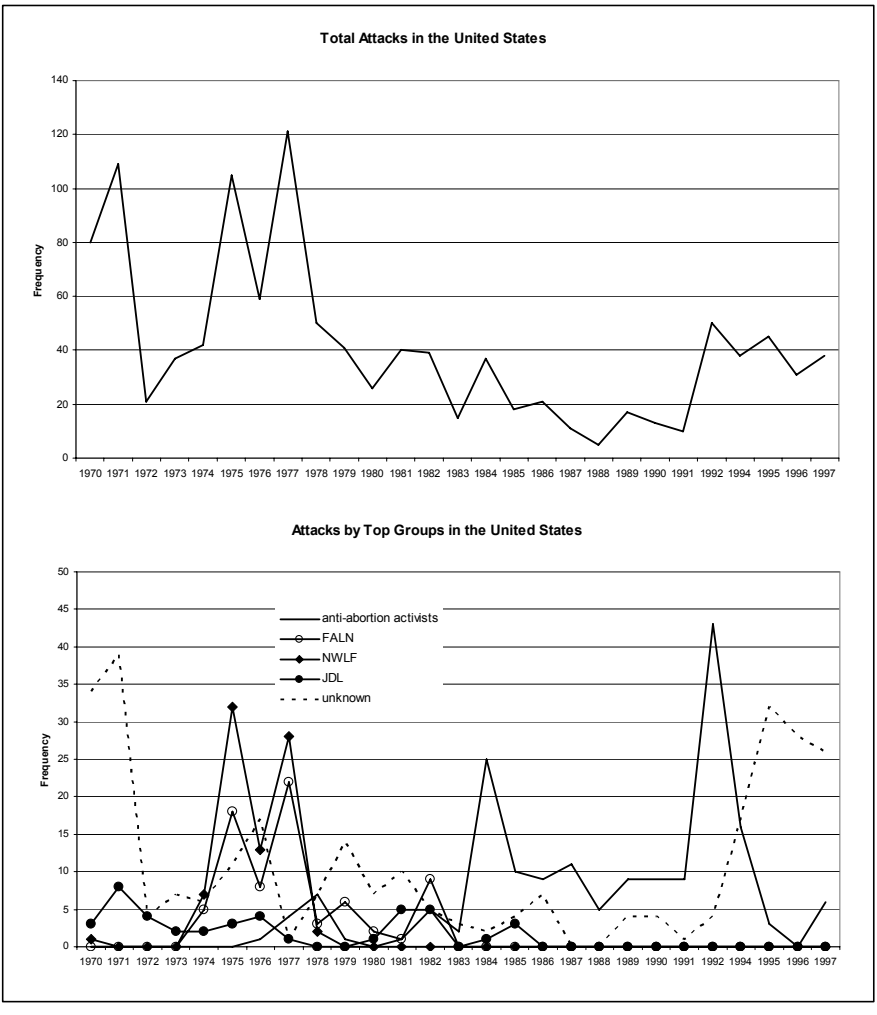

Fig. 5. Terrorist Attacks over Time in the United States for Select Groups

6 Summary of Current and Future Projects USing GTD

Several projects have been conducted using portions of the GTD. We summarize these below.

6.1 Testing a Rational Choice Model of Airline Hijackings

Our study of global aerial hijackings was recently published in Criminology [4]. Although we mostly use data from the Federal Aviation Administration (FAA), this paper demonstrates the strength of using incident based terrorism, like that in the GTD for assessing policy effects. Our results support the contagion view that hijacking rates significantly increase after a series of hijackings closely-clustered in time—but only when these attempts were successful. Finally, we found that the policy interventions examined here significantly decreased the likelihood of non-terrorist but not terrorist hijackings.

For this paper we developed a database that combines information from the GTD, the FAA, and RAND-MPIT. Based on these sources, we were able to develop a database of 1,101 attempted aerial hijackings that occurred around the world from 1931 to 2003. The GTD data were especially critical for allowing us to classify whether specific aerial hijackings were conducted by terrorist organizations.

6.2 Is Counter Terrorism Counterproductive? Northern Ireland 1969–1992

This second project is still underway, and uses a similar methodology to the above hijacking paper. In this case, however, we use data exclusively from the GTD.[6] In it, we examine 3,328 terrorist attacks perpetrated by Northern Irish groups between 1969 and 1992, classifying them as either nationalist or loyalist. We develop two theoretical perspectives that predict opposing impact of counter terrorist actions on future terrorist strikes. The dominant rational choice perspective suggests that government intervention will decrease terrorist strikes by increasing the costs of future strikes. By contrast, a legitimacy perspective suggests that counter terrorist retaliation may actually increase future terrorist strikes by undermining the legitimacy of governmental regimes. We identify six major British counter terrorist interventions for the years spanned by the data. Since loyalists generally support the British government, we expect the nationalists to be more sensitive to the British interventions. We use Cox proportional hazard models to estimate the impact of these interventions on the likelihood of future terrorist attacks. In five of the six cases examined, we find the strongest support for legitimacy arguments: government intervention resulted in *increased* activity for Nationalist organizations. Overall, the results support the conclusion that counter terrorism, especially when it involves the military, may actually increase the risk of additional terrorist strikes. We discuss the implications for future research and policy.

6.3 The Impact of Terrorism on Italian Employment and Business Activity

In this research we use the GTD to assess the economic consequences of terrorism on changes in the number of firms and employment in Italian providences from 1985 to 1997. We use panel data methods and find that in the year following a terrorism attack, the number of firms in the providences is significantly reduced. Similarly,

[6] Recall that we supplemented the original PGIS data to create the new GTD. The Northern Ireland data from GTD include sources other than PGIS, such as the Conflict Archive on the Internet (CAIN, http://cain.ulst.ac.uk/).

employment also drops in the year following a terrorist attack. This decrease is mostly attributed to reductions in growth rates of births and expanding firms, significantly reducing the number of firms the following year.

7 Conclusion

We have introduced the newly developed Global Terrorism Database that was predominantly compiled from a private source and is the only terrorism database that includes both international and domestic incidents over an extended period of time. We presented a brief description of global terrorism and then described three analyses that relied heavily on the GTD data. Yet, this only begins to describe the analytical potential of the GTD. We have well over a dozen projects with new ideas exponentially forming. For example, we are currently geocoding the data to use geographic mapping techniques to display spatial and temporal patterns of terrorist activity. Our major goal here is to create regional and world-wide maps depicting numbers and rates of terrorist events around the world. Yet, we also are actively assessing the geographic distributions of localized activity. One current project focuses on terrorism attacks in Spain to identify hot spots, temporal changes in the spatial distribution of incidents, and tests models of diffusion. We have also merged the GTD data with other sources to estimate the effects of political, economic, and social indicators on terrorism outcomes. Because the data are longitudinal we can also examine how terrorism contributes to political, economic, and social changes for a country or region.

And finally, additional future projects can further explore the likely non-linear patterns of terrorist events by considering concepts explaining the acceleration or deceleration of activity. For instance, Schelling [17] shows "white flight" behaves as a tipping point phenomena such that when a given neighborhood reaches a particular concentration of African Americans, white flight increases inevitability and precipitously. Applied here, tipping points could be described as that critical point in a region when periodic terrorist activity accelerates to high frequencies of heavily concentrated violence. Other concepts worth exploring are threshold models [7], [22], contagion effects [3], [11], epidemic theories [3], diffusion models [2], and bandwagon effects [7] (for review, see [10]).

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