Modeling Terrorist Organization Attack Patterns

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Abstract: Although terrorism has been investigated by researchers for decades, not much research has gone into studying specific attack patterns. This type of research into repetitious behavior has been done in criminology, but has not yet been done for terrorism. Using the Global Terrorism Database, I analyze the frequency of specific types of targets, weapon choices, and other elements of terrorist attacks to look for trends within each organization. I find that while some patterns emerge, patterns that are truly unique to a specific organization do not emerge. More research is required to determine if this holds as more variables are added to the model.

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As terrorist attacks increase in frequency, the question of how to analyze them and eventually stop them, becomes more pertinent. Most terrorism research looks at psychological, religious, or socioeconomic factors that affect attacks, but little research has sought to analyze terrorist organizations based on their actions and methods (although see Wilson (2000)).

In order to better analyze terrorist behavior, and predict future actions, it is necessary first to form a comprehensive modeling process that allows the analysis of terrorist organizational behaviors. This would allow us to determine how terrorist organizations utilize materials in carrying out attacks, how they interact with authorities during attacks, and specific locations they routinely target. The goal of this research is to determine if it is possible to model and predict terrorist behavior.

Analysis of the Literature

For modeling and profiling to be possible, a terrorist or terrorist organization must behave in a rational manner, weighing choices and choosing the most beneficial path rather than acting at random. This dictates the selection of tactics; groups will engage in tactics that have demonstrated effectiveness in the past and abandon those that do not. Pape (2003) reports that in about half of all suicide bombing campaigns, the target government follows with concessions toward the terrorist organization carrying out the attack. This suggests that rational terrorists would perform more suicide bombings should as time moves forward (Drake, 1998). In general, it is indeed the case that suicide bombings have been increasing (START, 2013), showing that rational cost/benefit analysis decisions can be used to model terrorist behavior. While there have been criticisms made of Pape's research, the fact that it is consistent with other scholars', such as Drake (1998), findings lends credence to it being accurate..

Problems with psychological profiling

The literature has been consistent that a generalizable profile for terrorists in any is nearly impossible (Victoroff, 2005). Attempts to profile terrorist actions based on attributes such race, gender, and age all are too simple to be comprehensive (Rae, 2012). This means that attempts to use age or socioeconomic status to create a standardized profile of the behavior terrorist organization functions is not a useful method of analysis. The use of psychological profiling for terrorists has yielded many different results, with no single pattern emerging. The only commonality in the study of terrorist psychological profiles is the fact that there is no commonality. Volkan (2002) argues that terrorists often have psychological issues that they deal with through their aggressive actions. Ferracuti and Bruno (1981) argue that terrorist behavior is caused in part by disturbed, unstable personalities. Conversely, Juergensmeyer (2001) argues that terrorists are driven by repressed sexual desires. Many other researchers, such as Vaisman-Tzachor (2007), say that terrorism is attributed to a number of psychological, political, and religious factors, with no predominant issue driving it all.

This is in addition to the issue of how to prove, if possible, that a captured terrorist is even psychologically representative of their uncaptured co-terrorists. There are often selection biases that affect how information on captured terrorists is recorded, meaning the data are skewed to begin with (Smith & Morgan, 1994). Being captured could also be a sign that the individual is not as good a terrorist as others, or does not have the right mental state to perform their duties in a satisfactory manner (Borum, 2004). Crenshaw (1986) notes that many interviews with terrorists happened before the terrorists were convicted, thus meaning the terrorists would have sought to not tell their full story in case the interviewer was subpoenaed. Other literature also suggests that terrorists may be as mentally stable as the rest of the population (Corrado,

1981). Silke (1998) points out that there were many attempts to classify horrific people, such as the Nazis, as different due to their mental state. Researchers, though, were unable to identify Nazis based purely on their psychological profiles, as demonstrated in their Rorschach test results. Repeated attempts to analyze terrorist organizations as outgrowths of unstable psyches have shown it is not possible to do so. There are many unknowns that make it difficult to craft a comprehensive psychological image of a terrorist.

Using ideological factors to profile actions by terrorist organizations or individuals is also difficult because, ideological mapping is not perfect (Drake, 1998). Drake (1998) argues that since ideologies are made up of many different factors, knowing the ideological inclination of a terrorist will not indicate what their target might be. Organizations can and will change definitions when it suits them to change who is a legitimate target. For example, the Provisional Irish Republican Army (PIRA) at one time claime: “We'll define whether someone's helping the security forces or not: it's not for you to make the definition and criticise us for not agreeing with it” (Drake, 1998, p. 62). Drake (1998) also points out that members’ beliefs do not necessarily line up with the professed ideology of the leaders. This means that members often interpret their duties in a different manner than leadership would.

Evidence that predictive modeling can work

On the other hand, there are cases where modeling behaviors of terrorist organizations does work. Wilson (2000) found that terrorists involved in hijackings, sieges, and kidnappings shared many similar behavioral patterns with criminals regarding the repetition of their actions. In particular, the actions of terrorists are most closely aligned to those of arsonists and rapists (Canter & Heritage, 1990; Canter & Fritzon, 1998; Wilson M. A., 2000; Wilson, Jack, & Canter,

2000). These studies found that arsonists and rapists carried out attacks in the same way each time they attempted to commit a crime, allowing researchers to create prediction of how they would go about their crime. Wilson's (2000) research found that hjackers, kidnappers, and organizations that performed sieges all performed those attacks in the same way, including interacting with law enforcement and negotiating termination of their attacks.

Drake (1998) notes while profiling purely on ideologies is impossible, ideologies can serve to create rough groups of legitimate targets. This allows us to determine which targets are legitimate and which are not. Drake (1998) shows that ideological profiling gives researchers a way to select groups for closer analysis by knowing that chosen groups will share more than just surface similarities. Drake's (1998) research is consistent with Asal and Rethemeyer's (2008) research. When the "other" (Asal & Rethemeyer, 2008, p. 437), the group that the terrorist organization has set themselves in opposition, is identified it becomes possible to map potential targets, which Drake (1998) says allows organizations to be grouped and studied based on their similar potential targets.

The question of whether organizations, rather than individuals, can be profiled has not received much coverage in the literature. As discussed already, researchers have found that criminals have patterns that they adhere to (Canter & Heritage, 1990; Canter & Fritzon, 1998; Wilson, Jack, & Canter, 2000), and as Wilson (2000) found terrorist organizations tend to act in the same manner. Because criminals and terrorists have patterns, Wilson (2000) argues that they must behave rationally, choosing to perform attacks as they know how rather than risk new variants that have a higher chance of failure with less benefit if it succeeds. Thus, while rational choice theory is not perfect, terrorists show evidence of sufficient and rational forethought and planning.

Wilson (2000) also finds that the demands hijackers make are not random, but generally fit a pattern based on both the side issuing the demands and the government that is receiving demands (2000). Taking this into account, Wilson (2000) analyzes data of hijackings, kidnappings, and barricade incidents to look at the perpetrating groups using as her main points of analysis how prepared an organization was and how they systemically perpetrated attacks. Wilson (2000) finds that the hijackings, kidnappings, and barricade incidents thought to be carried out by a specific group generally matched in most measured variables with those types of attacks known to have been carried out by the specific group in question.

While Wilson's (2000) research tells us about patterns, her sample selection was not that large, focusing on a small smattering of specific incidents in the Arab world, entirely limited to Popular Front for the Liberation of Palestine (PFLP) and a few other unaffiliated groups. Though there is the chance that the findings only apply to the Arab world, and more specifically to Palestinian hijackers, her findings are supported by Canter and Heritage's (1990) and Canter and Fritzon's (1998) works on criminal behavior, as noted above. Another issue in Wilson's (2000) research is her lack of data in the paper itself. She does not provide detailed methods or data to allow replication of her results, which makes it different to test her results. In addition, it means it is difficult to extrapolate her methods into generalizable practices.

Clauset et al. (2007) found that terrorist groups that perform more attacks are less lethal.. Their findings echo the findings of Richardson (1948), who also found an inverse relationship between frequency of conflicts and their severity. This indicates that higher lethality is harder to achieve and must be planned with much more effort than a lower lethality attack. It follows that terrorist organizations must make a conscious choice of what ratio of number of attacks to number killed they want. As such, when sorting through data of attacks caused by unknown or

uncertain perpetrators, possible attackers can be ruled out based on the lethality of the attack in question.

In sum, the literature is consistent that the creation of a single, generalizable psychological profile for all terrorist organizations is not possible (Victoroff, 2005). However, research also shows that profiles that take terrorist methodology and repetitious behavior into account have succeeded (Wilson, 2000). Given the above, it follows that it should be possible to analyze and find patterns within the actions of terrorist organizations. The ability to accurately profile an individual organization is immensely useful in preventing or mitigating terrorist attacks. If it is known who and what a terrorist organization routinely targets, and in what way they routinely target, it is possible to better devise responses to crises and be better prepared for attacks. Profiling individual organizations also means that attacks without claims of responsibility can be credited to the most likely perpetrating group.

Hypotheses

Building on Wilson's (2000) research, I want to see if similar trends can appear within terrorist attacks other than hijackings, kidnappings, and sieges. Wilson's (2000) analysis looks at several dozen variables, I however will only be looking at a few. In selecting variables for my analysis, my choices are influenced not only by Wilson (2000), but by both Drake (1998) and Rae (2012). Using the data in the Global Terrorism Database (GTD) (START, 2015), I will be looking at several dimensions of terrorist behavior during attacks: type of attack, lethality, whether or not the attack succeeded in its objective, general target choice, specific target choice, the nationality of the target, whether or not the attack was a suicide attack, and duration of attack.

Each of these dimensions looks at a key aspect of how terrorists behave when perpetrating attacks. On their own, none of these factors can be used to identify a specific group, but taken together they will create an image of the organization's preferences on attacks, targets, and other factors of terrorist incidents that will be specific to an individual organization. Thus, my hypotheses are:

> ***H1:*** *Over time, an individual terrorist organization will have consistent methods of attack, target type, weapon choices, lethality, targeted nationalities, duration of attacks, proportion of suicide to non-suicide attacks, and the proportion of successes to failures.*
>
> ***H2:*** *An individual terrorist organization will possess a distinct set of values for the variables mentioned in* ***H1****.*

Wilson's (2000) research also examined attacks where the perpetrator was unknown or in doubt, and looked to see how those attacks matched up with the other attacks she analyzed. Using the results found in testing ***H2*** I will also look at attacks performed by uncertain perpetrators. In order to verify attacks with uncertain perpetrators observations with uncertain perpetrators will be removed from the dataset before testing ***H1*** and ***H2*** so that their values for each variable can be compared against the index created by testing ***H2***.[1]

Based on the above hypotheses, it holds that if individual terrorist organizations have specific methods and patterns in their attack and target choice, attacks performed by unknown terrorist organizations should be able to be correlated with attacks performed by known groups. Attacks perpetrated by unknown organizations are difficult to classify and respond to. If an organization does not claim all of their attacks, is there a trend in the attacks or do organizations

[1] Uncertain perpetrated attacks occur when the attack is coded in the GTD as having a suspected, but not known perpetrator, rather than a truly unknown perpetrator

just selectively choose when to claim and when not do in the moment? Using those findings, unknown groups in the GTD (2015) data set should align within a margin of error with the groups most likely to have performed those acts. Groups will be checked for consistent values across the board, not just several, and it will be checked for statistical significance. Although these last two suppositions are not hypotheses in and of themselves, seeking to find generalizable methods to apply Wilson's (2000) research is a necessary step. As this model is untested the results from analyzing uncertain and unknown perpetrator attacks will not be one hundred percent certain, merely give more direction for research and analysis.

Data and Methodology

Data Selection

In this paper I use the Global Terrorism Database (GTD) (START, 2015) to test my hypotheses. The data set contains over 100,000 entries on nearly 200 countries from the years 1970 to 2015.[2] The definition for terrorism used by START is:

"the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation" (2016, p. 9). START (START, 2016, p. 9) uses three primary criteria for ascertaining if an attack fits this definition: 1) "the incident must be intentional," 2) "the incident must entail some level of violence or immediate threat of violence," and 3) "the perpetrators of the incidents must be sub-national actors." Cases in the GTD (START, 2016, p. 9) must also meet two of the three following criteria: 1) "the act must be aimed at attaining a political, economic, religious, or social goal," 2) "there must be evidence of an intention to coerce, intimidate, or convey some other message to a

[2] As with all GTD analyses, this paper will not cover the year 1993 due to that year being lost from the dataset following a transfer of ownership from a private company to START.

large audience … than the immediate victims," and 3) "the action must be outside the context of legitimate warfare activities."

I will be focusing my analysis on four countries, Colombia,[3] the United Kingdom,[4] the Philippines, [5] and Spain.[6] This is due to the presence of large, long lasting terrorist organizations in each of them. Each is well represented over the years in the dataset. In addition, each of these countries contains prolific groups that have generally slowed down their rate of attacks or quit entirely, allowing several organizations' entire life cycles to be analyzed. Within these countries, I will be limiting my analysis to only looking at terrorist organizations that have performed at least 50 or more attacks, chosen after removing observations with unknowns in my chosen variables. 50 attacks was selected because it wasn't large enough to rule out many different organizations, but at the same time wasn't small enough to allow incredibly transient organizations into the dataset.

For the purposes of my research, I will be only looking at terrorist attacks conducted by domestic organizations. Because I am not looking at international terrorism, I will not need to control for state-level factors that may cause international terrorist organizations to select a particular country over another (Kydd & Walter, 2006; Wade & Reiter, 2007). As regime type is known to affect how organizations choose to operate, I will check the effect that a regime type change has on terrorist organizations within the state.

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[3] The organizations I will be analyzing are: Death Squad, Left-Wing Guerrillas, M-19 (Movement of April 19), Narco-Terrorists, National Liberation Army of Colombia (ELN), Popular Liberation Army (EPL), Revolutionary Armed Forces of Colombia (FARC), Ricardo Franco Front (Dissident FARC), Simón Bolívar Guerrilla Coordinating Board (CGSB), and The Extraditables

[4] The organizations I will be analyzing are: Dissident Republicans, Irish National Liberation Army (INLA), Irish Republican Army (IRA), Protestant Extremists, Ulster Freedom Fighters (UFF), and Ulster Volunteer Force (UVF)

[5] The organizations I will be analyzing are: Abu Sayyaf Group (ASG), Bangsamoro Islamic Freedom Movement (BIFM), Moro Islamic Liberation Front (MILF), Moro National Liberation Front (MNLF), and New People's Army (NPA)

[6] The organizations I will be analyzing are: Basque Fatherland and Freedom (ETA), First of October Antifascist Resistance Group (GRAPO), and Terra Lliure

Variables

As stated above, my variables are: methods of attack, target type, weapon choices, lethality, targeted nationalities, duration of attacks, proportion of suicide to non-suicide attacks, and the proportion of successes to failures. In addition I will also be utilizing a time variable.

My first variable is the time dimension. It will be created using the year, month, and day values from the GTD, starting in 1970 and continuing to 2015. Observations that do not have day, month, and year recorded are dropped. This variable will only be used for checking for changes over time in the other variables. Next, I will be analyzing terrorist target choice, by using GTD categorical data that encodes for twenty-two different target choices (START, 2016, pp. 30-34).[7] As a subset of the this variable, I will also look at specific sub-targets.[8] The next variable I am analyzing codes for the type of attack the organization conducts. This variable encodes different attacks into nine different broad categories (START, 2016, pp. 22-23).[9] The next variable looks at the type of weapon used by the organization in the attack. The GTD encodes thirteen different types of weapons (START, 2016, pp. 26-27).[10] The next variable used is the nationality of the target (START, 2016, p. 39).

[7] *targtype1* categories: 1, business; 2, government (general); 3, police; 4, military; 5, abortion related; 6, airports & aircraft; 7, government (diplomatic); 8, educational institution; 9, food or water supply; 10, journalists & media; 11, maritime (includes ports and maritime facilities); 12, NGO; 13, other; 14, private citizens & property; 15, religious figures/institutions; 16, telecommunication; 17, terrorists/non-state militias; 18, tourists; 19, transportation (other than aviation); 20, unknown; 21, utilities; and 22, violent political parties.

[8] As the sub-target variable has well over one hundred values, it will not be spelled out in this paper for the sake of space.

[9] *attacktype1* Categories: 1, assassination; 2, armed assault; 3, bombing/explosion; 4, hijacking; 5, hostage taking (barricade incident); 6, hostage taking (kidnapping); 7, facility/infrastructure attack; 8, unarmed assault; and 9, unknown.

[10] *weaptype1* categories: 1, biological; 2, chemical; 3, radiological; 4, nuclear; 5, firearms; 6, explosives/bombs/dynamite; 7, fake weapons; 8, incendiary; 9, melee; 10, vehicle; 11, sabotage equipment; 12, other; and 13, unknown.

Attack lethality is a numeric variable that is a function of GTD variables that code number killed and number wounded in each attack (START, 2016, pp. 46-47). In this paper, lethality will be coded as $\frac{\#\ killed}{(\#\ killed + \#\ wounded)}$. This variable will return a value of between 0 and 1, with 1 being perfectly lethal and 0 being none killed at all. For results where both number killed and number wounded are 0, lethality will be set to return a value of 0.[11]

I will be using four dummy variables. The codes for whether an attack was successful or not (START, 2016, p. 24). Success is a difficult term to quantify; in the GTD it is defined as whether or not an attack was fully carried out. The next dummy variable codes for if there is evidence the perpetrator(s) intended to escape or not, whether or not they intended to die (START, 2016, p. 25).The third dummy variable codes for whether or not the attack in question lasted longer than 24 hours (START, 2016, p. 12). The final dummy variable denotes whether or not it is questionable if the observed attack indeed was conducted by the recorded perpetrator (START, 2016, p. 42).

Methodology

First, the data will be checked for any indicators that a terrorist organization dramatically changed their practices in regards to each of the chosen variables. This is to ensure that when analyzing specific values for each variable the results are not biased toward a period of heavy activity that is not representative of their tenure as an active terrorist organization. To check this, each major variable will be regressed on the time variable and sorted by organization. If a strong link is found between specific variables and time, then analysis of that group will be subdivided

[11] Number killed will be ignored if the values are between 0 and 1; it is a feature of the newer data collection methods START employs that divide total killed by number of days in purportedly linked attacks

by time period. In addition, for the Philippines and Spain, the regression will also be to determine if the country's terrorist organizations changed their tactics as the regime type changed.

Using STATA, I will be running the data through the *prtest* command, which takes a binary variable and predicted probability of the variable being 1, and then analyzes how much more or less frequent the variable is 1 in relation to the proposed probability.[12] For this paper, I will be testing the above variables against a null hypothesis that their probability of occurring is simply $\frac{1}{number\ of\ possible\ values\ in\ variable}$, which will return a z-score that can be used to easily check the statistical significance of the frequency of the value in question against chosen p-values. Different variations of the test will be run, first simply sorting by organization name for all variables and then by organization name and target choice.[13] For the nationality variable, the percent value of foreign born population will be taken from the censuses of the United Kingdom[14] and Spain,[15] which both provided easily obtainable data on foreign born individuals

[12] As the prtest command relies on binary variables, I first must create dummy variables for each value of each categorical and text variable. For example, for the attack type variable, the method of creating variables that work with the prtest command would be:

gen freqattacktypeψ= .
replace freqattacktypeψ=1 if attacktype1==ψ
replace freqattacktypeψ=0 if attacktype1!=ψ

With attacktype1 being the GTD variable for attack type and each φ replaced with a specific value of attacktype1. The same will be done to target choices, sub-target choices, and weapon used, as freqtargtypeψ, freqtargsubtypeψ, and freqweaptypeψ respectively.

[13] With the nationality variable, the process is similar to the above process. However, it will be specific to each country's dataset rather than a generalizable program, and will be saved as freqnatltyψ, with ψ being the number from the GTD for the nationality of each country in my dataset. In addition, the assumptions for the null probability for the nationality tests are slightly different than above. The probability will be (1-(%population that is foreign born)), thus an extremely negative z-score or an extremely positive z-score will show that an organization targets nationalities differently than can be explained by random chance.

[14] The United Kingdom census for 1971 and parts of the country for 2011 was accessed via http://casweb.ukdataservice.ac.uk/1971/step1.cfm and the rest of the 2011 census was accessed via http://infuse.ukdataservice.ac.uk/.

[15] For Spain, the 1981 census was accessed via http://microdata.worldbank.org/index.php/catalog/2138 and the 2013/2014 census was accessed via http://www.ine.es/en/prensa/np854_en.pdf

residing within. To generate the probability to compare against, the percent of the population that was foreign born in the early census will be averaged with the percent of the population that is foreign born in the later census.[16] [17] For lethality, I create three dummy variables. The first category equals 1 if lethality is less than or equal to 0.25 and 0 if not. The second category will be 1 if lethality is greater than 0.25 but less than or equal to 0.75 and 0 if not. Finally, the third category will be 1 if lethality is greater than 0.75 and 0 if not.

To analyze my secondary question, of whether the attacks by uncertain perpetrators match with the attacks of certain perpetrators, the observations where organization responsible is in question will be analyzed for separately. This is for analyzing the data and finding values of variables for observations that do not match with the index values for the supposed perpetrators. Observations that are distinct enough, possessing completely different combinations of index values, can be safely assumed to not have been perpetrated by the supposed perpetrator.

Finally, to evaluate whether any attacks with completely unknown perpetrators can be matched with known organizations, the observations with unknown organization name will be sorted using target selection, just as in testing for ***H2***. Within the resulting observations, the data will be checked for specific values that match with Observations that match values for a specific group will be kept.

[16] The United Kingdom has multiple nationalities recorded for its people, with Great Britain and Northern Ireland being counted separately. For the purpose of this dataset, those two nationalities will be recorded and analyzed as one nationality, United Kingdom.

[17] For Terra Lliure in Spain, as they were mostly active during the 70s and 80s, the percent of foreign born residents will be just the 1981 value

Results

I found that in general there were no cases of significant changes in any variable over time for any of the terrorist organizations in the dataset. In the relatively few cases where more than 10 observations were found to have a relevant t-value for the coefficient for *edate* and a strong, over 0.5 r^2 value, the cause was due to a large clumping of similar values, and a small number of outliers either earlier in the data or later in the data.[18] As such, despite terrorists groups being known to learn over time (Jackson, et al., 2005) they do not seem to change their general methods of attack, targets, weapons used, success, or any other measured variable over time. The organizations with the largest number of attacks, such as the IRA and NPA, had the highest r^2 values and best t-coefficients for the sample size, but when factoring out uncertain incidents, the data had virtually no change over time.

In the case of the organizations in Spain and in the Philippines, where regime changes occurred during the time frame I am examining, the effects over all were minimal on the terrorist organizations. In Spain, the only organization that showed a significant change, and more than 10 observations, in any variable over time was GRAPO. This only occurred, though, when GRAPO used firearms and targeted businesses, and occurred within sub-target choices. Other than that, the regime change did not seem to impact ETA, which did not become a prolific terrorist organization until after Franco's death and Spain's regime change. Nor did the regime change impact Terra Lliure, which did perform any attacks until years after Franco's death.

In the Philippines, the data is quite similar. Only the NPA and MNLF were serious terrorist organizations before the regime change, the MILF only just barely coming into existence and the rest not existing yet. The MNLF continued to perform the same exact types of

[18] Chosen because all data that falls within this limit has over half its variation explained by change over time

attacks, choose the same targets, and use the same weapons, with virtually no difference between pre- or post- regime change data. The NPA, on the other hand, did show some very noticeable change, although only in adding, rather than shifting entirely, types of attacks. Before 1987, the NPA entirely focused on assassinations, bombings, and bombings. After 1987, they also began to perform kidnappings and infrastructure attacks. However, these latter two were dispersed over the NPA's active years, and not done in any frequency that differed from the same frequency as random chance. In addition, this shift is only visible on a regression when controlling for weapon type used.

Overall, it appears that the terrorist organizations that spanned across regime changes in their home countries did not choose to change their attack types, targeting choices, or any other of the dimensions I measured in this paper.

Variables as they appear on the tables:

Each of these tables is organized by organization name, along with each measured variable. *attacktype1, targtype1,* and *weaptype1* use the values defined in the Variables section of this paper. For *lethality,* the values are 1, 2, and 3, corresponding to the three different levels of lethality that I coded for. *natlty1,* for Spain and the United Kingdom, is 1 if the organization targeted more native born targets than is proportional to the population of the country and 0 if they targeted less native born targets than is proportional to the population of the country. For *extended,* a value of 1 means the attack lasted longer than 24 hours, while zero means it did not. For *suicide,* a value of 1 means the attacker did not intend to survive, while 0 means they did intend to survive. Lasty, *success* is 1 for a successful attack, 0 if not a successful attack.

TABLE 1: Certain data, by organization name

Colombia

gname	*attacktype1*	*targtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Death Squad	1**, 2*	2**, 14**	5**	0**	3**	0**	1**	-
Left-Wing Guerrillas	2**, 3*	1**, 2**, 3*, 14**	6**, 8**	0**	1**	0**	1**	-
M-19	2**, 3**	1**, 2**, 3**, 4**, 14**, 19*	5**, 6**	0**	1**, 3*	0**	1**	-
Narco-Terrorists	1**, 3**	1**, 3**, 14**	5**, 6**	0**	1**	0**	1**	-
ELN	2**, 3**	1**, 2**, 3**, 4**, 14**, 19*, 21**	5**, 6**	0**	1**	0**	1**	-
EPL	2**, 6*	1**, 2**, 3**, 4**, 14**, 22*	5**	0**	1**, 3*	0**	1**	-
FARC	2**, 3**	1**, 2**, 3**, 4**, 14**, 19**, 21**	5**, 6**	0**	1**, 3**	0**	1**	-
Ricardo Franco Front	3**	3**, 4**	6**	0**	1**	0**	1	-
CGSB	2**, 3**	1**, 3**, 4**, 14**, 21**	5**, 6**	0**	1**	0**	1**	-
Extraditables	3**	1**, 2**	5**, 6**, 8**	0**	1**	0**	1**	-

*<0.01
**<0.001

Philippines

gname	*attacktype1*	*targtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Abu Sayyaf Group	2**, 3**, 6**	1**, 2**, 4**, 14**	5**, 6**	0**	1**	0**	1**	-
BIFM	2**, 3**	4**, 14**	5**, 6**	0**	1**	0**	1**	-
MILF	2**, 3**	4**, 14**	5**, 6**	0**	1**	0**	1**	-
MNLF	2**, 3**	1**, 2**, 4**, 14**, 21**	5**, 6**	0**	1**	0**	1**	-
NPA	1**, 2**, 3**	1**, 2**, 3**, 4**, 14**	5**, 6**	0**	1**, 3**	0**	1**	-

*<0.01
**<0.001

Spain

gname	*attacktype1*	*targtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	1**, 3**	1**, 2**, 3**, 4**, 14**	5**, 6**	0**	1**	0**	1**	0**
GRAPO	1**, 3**	1**, 2**, 3**	5**, 6**	0**	1**	0**	1**	-
Terra Lliure	3**	1**, 2**, 14**	6**	0**	1**	0**	1**	0**

*<0.01
**<0.001

United Kingdom								
gname	*attacktype1*	*targtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Dissident Republicans	3**	1**, 3**, 14**	6**, 8*	0**	1**	0**	1	1
INLA	1**, 3*	1**, 2*, 3**, 14*	5**, 6**, 8**	0**	1**	0**	1*	1*
IRA	1**, 3**, 7**	1**, 2**, 3**, 4**, 14**	5**, 6**, 8**	0**	1**	0**	1**	1**
Protestant Extremists	1**	2**, 14**	5**	0**	3**	0**	1**	1*
UFF	1**	2**, 14**	5**, 6**	0**	3*	0**	1**	1*
UVF	1**	14**	5**	0**	3**	0**	1**	1

*<0.01
**<0.001

Looking at the data, many organizations within the same country overwhelmingly choose the same type of weapon, the same kind of attack, and the same kinds of targets. This is especially evident in the Philippines as all groups are more likely to select armed assaults and bombings than other types of attacks ($p<0.001$). This is most likely because the Bangsamoro Islamic Freedom Movement (BIFM), Moro Islamic Liberation Front (MILF), and Moro National Liberation Front (MNLF) are all offshoots of the same organization. In the case of the Abu Sayyaf Group this is most likely because it drew from the same pool of fighters, and thus the training and techniques, as the BIFM, MILF, and MNLF.

In Spain, this weapon usage similarity is different. There is not a strong connection between the Basque Homeland and Liberty terrorist organization (ETA), the First of October Anti-Fascist Resistance Groups (GRAPO), and Terra Lliure, so a more likely explanation for their similarities is that all organizations had a similar understanding of what the socially

acceptable targets were in Spain. This makes sense given that Terra Lliure and ETA were seeking secession and thus would attack similar targets in similar ways that they felt would encourage the Spanish government to concede. GRAPO, on the other hand, had different goals. The most likely explanation for GRAPO's similarity with the other two was that it was probably emulating the other organizations' actions.

In Colombia, bombs and firearms were again the primary weapon choices. The Extraditables and Left-Wing Guerrillas utilized incendiary weapons more often ($p<0.001$). The tactics for Colombian terrorist organizations were similar as well; most organizations in Colombia focused on bombings and/or armed assaults, with Narco-Terrorists and the Death Squads utilizing a large number of assassinations as well.[19] The connections that can be observed between the organizations in Colombia are most likely due to the Simón Bolívar Guerrilla Coordinating Board's (CGSB) efforts to coordinate many different terrorists throughout Colombia.

Interestingly in the United Kingdom, Protestant groups avoided bombings while Catholic groups flocked to perform bombings more often than other types of attacks. Out of all the organizations in the United Kingdom, only the organization described as "Dissident Republicans" did not perform a significant number of assassinations. Instead, they focused entirely on bombings and incendiary weapons; they clearly sought large scale destruction instead of killing key opponents as the other organizations practiced. The Irish Republican Army (IRA) was the only group in the dataset to perform a significant number of infrastructure attacks. In addition, they were the only group in the United Kingdom to perform a statistically greater number of attacks against military targets than random chance ($p<0.001$). While the military as a

[19] The Death Squads mentioned in the GTD are quite possibly not a single organization, but rather a collection of hit groups that were linked together by researchers and data collectors

target is popular in the Philippines and Colombia, it is not as popular in Spain and the United Kingdom.

All groups except the Ricardo Franco Front, the Extraditables, and GRAPO perform a statistically significant number of attacks against private citizens and private property. On the other hand, groups such as the BIFM and Ulster Volunteer Force (UVF) performed attacks almost exclusively on private citizens or property. In the United Kingdom and Spain, assassinations are much more common than in the Philippines and Colombia. The latter two countries preferred armed assaults and bombings, whereas the former two countries preferred assassinations and, to a lesser extent, bombings as well. Bombings were the most preferred method of attack in every country analyzed. This is not completely unexpected, as attacks and targets alone cannot reliably identify a terrorist group, or else governments would have been easily able to prepare for attacks and stop them, or at least contain them, with much more ease than displayed in history.

The lethality of different terrorist groups was interesting. The majority of terrorist organizations analyzed in this paper were on the lower end of lethality, with more injured than killed in a majority or plurality of attacks performed. However, four groups, the 19th of April movement (M-19), the Popular Liberation Army (EPL), the Revolutionary Armed Forces of Colombia—People's Army (FARC), and the New People's Army (NPA), performed high lethality attacks in addition to low lethality attacks. Four groups, the three Protestant groups in the UK and the Death Squad in Colombia, performed only high frequency of attacks with high lethality ($p<0.001$). While the latter four organizations all performed a significant ($p<0.001$) number of assassinations, the previous four organizations, save the NPA, did not perform significant numbers of assassinations.

Interestingly, in the two countries that had data on foreign born inhabitants, the results were quite dissimilar. Terrorist organizations in the United Kingdom tended to mainly hit British or Northern Irish targets. In Spain, ETA and Terra Lliure both killed, injured, or targeted many more foreigners than random chance would suggest, while GRAPO targeted effectively the same proportion of foreigners and natives as the actual population distribution.

TABLE 2: Uncertain data, by organization name

Colombia	uncertain							
gname	*attacktype1*	*targtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Death Squad	1**	2**, 14**	5**	0**	3**	0**	1**	-
Left-Wing Guerrillas	3**	1**, 2**, 3*	6**	0*	1*	0*	1	-
M-19	3**, 7**	1*, 3*, 19**	5**, 6**, 8**	0**	1**	0**	1**	-
Narco-Terrorists	1**, 3**	1*, 2**, 3*	5**, 6**	0**	1	0**	1*	-
ELN	3**	1**, 14**, 19*, 21**	5**, 6**	0**	1**	0**	1**	-
EPL	2*	4**	5**	0	3	0	1	-
FARC	3**	1**, 2**, 3**, 4**, 14**, 19**, 21**	5**, 6**	0**	1**	0**	1**	-
Ricardo Franco Front	3**	4**	6**	0	-	0	1	-
CGSB	6**	2***	5**	1	1*	0*	1*	-
Extraditables	3**	1**	6**	0*	1*	0*	1*	-
*=0.01 **=0.001	*** - few attacks all are same type							

Philippines	uncertain							
gname	*attacktype1*	*targtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Abu Sayyaf Group	3**	1**, 2**, 14**	5**, 6**	0**	1**	0**	1**	-
BIFM	3**	1**, 4**, 21**	6**	0**	1**	0**	1**	-
MILF	2**, 3**	2*, 14**, 21*	5**, 6**	0**	1**	0**	1**	-
MNLF	3**	1**	6**	0*	1**	0**	1**	-
NPA	1*, 2**, 3**, 7**	1**, 2**, 3**, 4**, 14**	5**, 6**, 8**	0**	1**	0**	1**	-

*=0.01
**=0.001

Spain	uncertain							
gname	*attacktype1*	*targtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	1**, 3**	1**, 2**, 3**, 4*, 14**	5**, 6**	0**	1**	0**	1**	0*
GRAPO	3**	3**	5*, 6**	0**	1**	0**	1**	0
Terra Lliure	3**	1**, 2**	6**	0**	1**	0**	1	0**

*=0.01
**=0.001

United Kingdom	uncertain							
gname	*attacktype1*	*targtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Dissident Republicans	3**	3**, 14**	6**	0**	1**	0**	0	1
INLA	3*	2**	6**	0	1*	0	1	1
IRA	1*, 3**	1**, 2*, 3**, 4**, 14**	5**, 6**	0**	1**	0**	1**	1*
Protestant Extremists	2*, 3**	14**	5**, 6**	0**	1**	0**	1*	1
UFF	2**, 3*	14**	6**	0**	1**	0**	1**	1
UVF	3**	14**, 17*	5*, 6**	0*	1*	0*	1*	1

*=0.01
**=0.001

The uncertain perpetrator data differs in several key ways from the certain perpetrator data. The uncertain data, being a smaller set than the certain data, contained markedly fewer differentiation in target selections, but the organizations with more represented uncertain observations still tended to possess a wide variety of target choices. In many cases, such as with attacks attributed to the M-19, the UVF, the UFF, the NPA, and CGSB, the most prevalent type of attack is different than the actual most prevalent type of attack for attacks known to have been committed by those organizations. Target selection is similar, but differs in some key areas. The purported UVF and the NPA observations both have a significant number of attacks against a target type that was not significant in the main data set, which is interesting. In the case of the purported UVF attacks, the target is other non-state militias or terrorist organizations. This is particularly interesting, because it shows that in supposed but unconfirmed attacks the UVF was thought to target other Northern Irish, presumably Republican, organizations. Yet in confirmed

attacks, this was not the case. The NPA purportedly targeted telecommunications, which as a separatist militia organization seems a logical choice, to limit government communication. Yet this prevalence did not show up in the set of known attacks. In general there is a lower preponderance of private citizen or property targets, although several organizations still attacked private targets as a primary choice.

The purported organizations had quite different lethality indices, with virtually no significant amounts of highly lethal attacks. The purported NPA observations, for example, were not found to have a statically significant amounts of highly lethal attacks, whereas this was the case in the certain dataset. The three loyalist terrorist groups, the UFF, UVF, and Protestant Extremists, were universally less lethal in the uncertain dataset, an interesting feature considering that in the certain dataset they almost exclusively commit assassinations, yet in the uncertain dataset they almost exclusively commit bombings. These large departures from known organizational behavior are quite intriguing, as they offer a glimpse of possible splits within the organization, rogue actions, or unrelated attacks that are lumped in with confirmed attacks due to difficulties of working with event data.

Overall, the uncertain data differs in several key ways from the dataset with certain perpetrators. Success was less sure in the uncertain dataset, although most groups did succeed statistically more than random. The percent of the time that they succeeded decreased though, in part because of smaller sample sizes but also due in part to more failures in this dataset as compared to the certain dataset. Suicide rates stayed the low and virtually nonexistent. Surprisingly, the CGSB performed a large number of extended incidents, lasting more than 24 hours, but the value was not statistically significant. The proportion of targets that were foreign was virtually unchanged between the certain and uncertain datasets. This is presumably because

even if a splinter cell or non-aligned perpetrator performed an attack that was attributed to a specific organization, said attacker must have believed similarly to the ones to whom the attack was attributed.

Summary of Certain Data, arranged by organization name and target selection

These data can be found in Appendix 1. In general, most of the organizations did not have specific chains of data that were unique to them. Several organizations, such as Abu Sayyaf, had clear attack patterns that were mostly unique to them. For the majority of organizations there were too many similarities between the variables I chose for it to be conclusive for the majority of organizations. There were not enough differences to clearly tell the organizations apart. As such, analyzing and comparing the uncertain datasets with the certain datasets is quite difficult, and not consistent enough to make reliable decisions.

Summary of Uncertain Data, arranged by organization name and target selection

The data can be found in Appendix 2. When analyzing the uncertain datasets, only points of specific divergence or convergence were analyzed. In addition, many of the data results that are not significant are due to smaller sample size, rather than a mix of many different values. In general, due to the lack of significant findings in the preceding section, relatively few results could be compared with the certain dataset. As above, some organizations were distinct enough that quite a few attacks could be generally ruled at as not having been committed by them, but as a whole the data was not conclusive enough in the previous section to be able to say much about this data.

Unknown perpetrator data

Given the fact that virtually no clear trends emerged in the certain datasets, organizing and analyzing the unknown perpetrators is, at this point, impossible. Given more variables this would have a better chance of succeeding.

Conclusion

Over all, there is evidence that organizations act in particular manners when carrying out attacks against targets, but more variables are needed before real patterns and trends can begin to show up in analysis. Several organizations did have distinct patterns that were unique to them, but only due to one or two variables while being identical in all other aspects to other organizations in the country. The sub-target variable was a useful tool in some scenarios, but in other cases it just illustrated that organizations seemed to often possess similar acceptable targets for attacks.

In the future, if researchers seek to do the same analyses, the first hurdle that would need to be overcome would be fixing the province/state variable in the GTD. A large percentage of this variable are coded as "unknown." Given that many of these observations contain sources, this should be a problem that is easily fixable. Adding this variable into consideration would give an index a spatial dimension, which would add immensely to the information of how the organization being analyzed operates and enacts attacks.

Another variable from within the GTD that would help future analyses would be a count of the number of perpetrators. This variable is available in the GTD, it is poorly implemented and does not have known quantities in many observations. It codes for the number of

perpetrators involved in a terrorist incident.[20] Fixing this variable is much more difficult than fixing the province/state variable, necessitating going through not only reports of the incident but also search for eyewitness accounts, police, and government reports on the incident. Such work is necessary though, as it is a good indicator of how organized an organization is, showing whether or not they can field large groups of terrorists and coordinate well.

Possessing reliable data on hostage taking incidents would also be useful, but the GTD dataset has quite a few unknown values for duration of hostage incidents, allowing little analysis of precise duration of hostage taking incidents, kidnappings, and building sieges. Having this data would allow much better analysis of how disciplined an organization was, looking at how long they would have been able to hold out and negotiate before accepting tradeoffs or resorting to violence. In addition to this, the GTD variable for how hostage scenarios ended is also filled with unknowns and is difficult to utilize.

Finally, a variable to model interaction with military or police would also be useful. This would allow us to look at how an organization responded and was responded to in specific scenarios. The response of a bomber will be different than the response of a hostage taker when confronted with authorities, and a way to model this would be extremely useful in further investigation into modeling organizational behavior.

In choosing the Philippines as country to analyze, mistakes were made. The Philippines was a poor choice because the majority of the large terrorist organizations in the country drew their members from the same pool. Each organization, other than the NPA, is a Moro nationality focused organization and thus shares territory, manpower, and other operating procedures. This means that the differences between the organizations is rather small, since they had the same

[20] In the base GTD dataset, over 130,000 entries have an unknown value for this variable, which makes it virtually useless for any wide analysis of the data on terrorist attacks.

training, experiences, and same reason for existing. Abu Sayyaf and the NPA did stand out, though. Despite its Moro roots Abu Sayyaf employed much different tactics than the MILF, BIFM, or MNLF.[21] The NPA was founded as a Marxist group rather than a nationalist group, which also meant it was different in certain dimensions than the other organizations in the country.

The United Kingdom faced similar problems as the Philippines, with many organizations sharing members and goals, thus making it harder to create solid, definitive profiles of each organization's actions. Specifically, Protestant Extremists and Dissident Republicans were umbrella organizations within which researchers combined the records of splinter factions of the major terrorist organizations in the United Kingdom. The INLA was literally a splinter organization of the IRA, which also compounded issues. That said, the United Kingdom was better for my purposes than the Philippines.

Conceptually, Spain was the best country analyzed. It possessed three different organizations that were each separate and unconnected with each other. At the same time, though, there were clearly similarities between each of the organizations that made any accurate differentiation between the organizations based merely on attack choices or target choices quite difficult. In addition, Spain is a country with too few terrorist organizations of medium to large size to have enough attacks with unknown or uncertain perpetrators to allow robust analysis.

Colombia had several organizations that were quite distinct from each other, although there were no truly unique organizations within the country. While the majority of the terrorist organizations were distinct entities, most were part of the CGSB and thus shared knowledge and tactics between each other. If returning to this study again, I would take time to research the

[21] www.bbc.co.uk/news/world-asia-17038024

CGSB and determine which events they helped coordinate and what kind of resources and training they contributed to the organizations under their influence.

Although I found no conclusive data, multiple trends emerged that were specific to several organizations. These trends, if studied using more dimensions of analysis, could yield better and more robust results. Those results could in turn be used to better examine attacks by those organizations and predict how to deal with those attacks when they occur, possibly even helping contain them and limit their effectiveness. Terrorism is still a massive problem around the world today, affecting all different kinds of governments, regimes, and people. Research into predicting terrorist actions is thus needed to aid in combating this problem and helping to create a safer future. My goal was to seek to model and predict terrorist organization behavior, so as to better respond to and contain terrorist attacks. My research, though, was not conclusive, thus warranting more investigation to seek conclusive results.

Access to all data sets and .do files used in this paper:
https://drive.google.com/drive/folders/0BwGEU4f9wKDlMTVPVS1sRzR0SmM?usp=sharing

Appendix 1: Charts organized by organization name and target type, certain Colombia

Colombia	Targtype1=1							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Left-Wing Guerrillas	2**	10**	8**	0**	1**	0**	1**	-
M-19	2**, 3**	4*	5**, 6**	0**	1**	0**	1**	-
Narco-Terrorists	3**	3**, 7**	6**	0**	1**	0**	1**	-
ELN	2**, 3**, 6*	3**, 10*	5**, 6**, 8**	0**	1**	0**	1**	-
EPL	6	9**	5**, 6	0**	1	0**	1**	-
FARC	3**	7**	5**, 6**, 8**	0**	1**	0**	1**	-
CGSB	3**	3**	5*, 6**	0**	1**	0**	1**	-
Extraditables	3**	3**, 7**	6**	0**	1**	0**	1**	-

*=0.01
**=0.001

Colombia	Targtype1=2							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Death Squad	1**	15**	5**	0**	3**	0**	1**	-
M-19	2**, 3**	14*, 21**	5**, 6**	0**	1**	0**	1**	-
Narco-Terrorists	1**, 3**	15**	6**	0**	1*	0**	1**	-
ELN	1*, 3**, 6**	15**, 18**	5**, 6**	0**	1**	0**	1**	-
EPL	3**, 6*	15*, 21**	5**, 6**	0**	1**	0**	1**	-
FARC	1**, 3**	15**, 18**	5**, 6**	0**	1*, 3*	0**	1**	-
CGSB	1*, 3**	15**	5**, 6**	0**	1	0**	1**	-
Extraditables	2**, 3**	15**, 21**	5*, 6**, 8**	0**	1**	0**	1**	-

*=0.01
**=0.001

Colombia	Targtype1=3							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Left-Wing Guerrillas	2**, 3*	22**	5**, 6**	0**	1	0*	1*	-
M-19	2**	25**	5**	0**	3**	0**	1**	-
Narco-Terrorists	1**, 3**	25**	5**, 6**	0**	3**	0**	1**	-
ELN	2**, 3**	22**	5**, 6**	0**	1*	0**	1**	-
EPL	2**	22*, 25**	5**, 6	0**	3**	0**	1**	-
FARC	2**, 3**	22**, 23**, 25**	5**, 6**	0**	1**	0**	1**	-
Ricardo Franco Front	3**	22**	5**, 6**	0**	3*	0**	1**	-
CGSB	2**	22**	5**	0**	1	0**	1**	-

*=0.01
**=0.001

Colombia	Targtype1=4							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
M-19	2**	29**	5**	0**	3**	0**	1**	-
ELN	2**, 3**	29**	5**, 6**	0**	3**	0**	1**	-
EPL	2**	29**	5**	0**	3**	0**	1**	-
FARC	2**, 3**	34**	5**, 6**	0**	3**	0**	1**	-
Ricardo Franco Front	3**	29**, 35**	6**	0**	1**	0**	0*	-
CGSB	2**	29**	5**	0**	3**	0**	1**	-

*=0.01
**=0.001

Colombia	Targtype1=14							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Death Squad	1**	67**, 77**	5**	0**	3**	0**	1**	-
Left-Wing Guerrillas	2**	73**	8**	0**	1**	0**	1**	-
M-19	2**, 3*	75**	5**, 6**	0**	1*	0**	1**	-
Narco-Terrorists	1**, 3**	67**, 74*, 79**	5**, 6**	0**	1	0**	1**	-
ELN	1*, 2**	67**, 73**, 75**	5**	0**	1, 3	0**	1**	-
EPL	2**	75**	5**	0**	1, 3	0**	1**	-
FARC	2**	67**, 75**	5**, 6**	0**	3**	0**	1**	-
CGSB	2**	75**	5**	0**	1, 3	0**	1**	-

*=0.01
**=0.001

Colombia	Targtype1=19							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
M-19	2**, 3*	99**	5**, 8**	0**	1**	0**	1**	-
ELN	2**, 3**	99**	5*, 6**, 8**	0**	1**	0**	1**	-
FARC	2**, 3**	99**	6**, 8**	0**	1**	0**	1**	-

*=0.01
**=0.001

Colombia	Targtype1=21							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ELN	3**	108**	6**	0**	1**	0**	1**	-
FARC	3**	108**	6**	0**	1**	0**	1**	-
CGSB	3**	107*	6**	0**	1**	0**	1**	-

*=0.01
**=0.001

Philippines

Philippines	Targtype1=1							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Abu Sayyaf Group	3**, 6*	2*, 7**, 9*	5**, 6**	0*	1**	0**	1**	-
MNLF	3**	5**, 11*	5**, 6**	0**	1**	0**	1**	-
NPA	2**, 7**	5*, 9**, 10**, 12**	5**, 6*, 8**	0**	1**	0**	1**	-

*=0.01
**=0.001

Philippines	Targtype1=2							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Abu Sayyaf Group	6**	15**, 18**	5**, 6**	-	1**	0**	1**	-
MNLF	3**	21**	5**, 6**	0*	1	0**	1*	-
NPA	1**, 2**	15**, 18**	5**	0**	3**	0**	1**	-

*=0.01
**=0.001

Philippines	Targtype1=3							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
NPA	1**, 2**	25**	5**, 6**	0**	3**	0**	1**	-

*=0.01
**=0.001

Philippines	Targtype1=4							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Abu Sayyaf Group	2**, 3**	29**, 34**	5**, 6**	0**	1	0**	1**	-
BIFM	2**, 3**	27**, 29**, 34**	5**, 6**	0**	1**	0**	1**	-
MILF	2**	29**, 34**	5**	0**	1	0**	1**	-
MNLF	2**	27**, 29**, 34*	5**, 6**	0**	1/3	0**	1**	-
NPA	2**, 3**	27**, 29**, 34**	5**, 6**	0**	1**	0**	1**	-

*=0.01
**=0.001

Philippines	Targtype1=14							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Abu Sayyaf Group	6**	68**, 77**	5**	1	1**	0**	1**	-
BIFM	2**, 3**	75**	5**, 6**	0**	1*	0**	1**	-
MILF	2**, 3**	67**	5**, 6**	0**	1	0**	1**	-
MNLF	2**, 3**	75**, 79**	5**, 6**	0**	1	0**	1**	-
NPA	2**	68*, 75**, 77**	5**	0**	1	0**	1**	-

*=0.01
**=0.001

Philippines	Targtype1=21							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
MNLF	3**	107**	6**	0**	1**	0**	1**	-

*=0.01
**=0.001

Spain

Spain	Targtype1=1							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	3**	3**, 4**, 7**	5**, 6**	0**	1**	0**	1**	0**
GRAPO	3**	3**	5**, 6**	0**	1**	0**	1**	0
Terra Lliure	3**	3**	6**	0**	1**	0**	1*	1

-*=0.01
**=0.001

Spain	Targtype1=2							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	1**, 3**	15**, 18**, 21**	5**, 6**	0**	1**	0**	1**	1*
GRAPO	3**	21**	6**	0**	1**	0**	1**	1
Terra Lliure	3**	14**, 21**	6**	0**	1**	0**	1	0**

-*=0.01
**=0.001

Spain	Targtype1=3							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	1**, 2**	25**	5**, 6**	0**	1**	0**	1**	1**
GRAPO	1**, 2**	25**	5**	0**	3**	0**	1**	0

*=0.01
**=0.001

Spain	Targtype1=4							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	1**, 3**	27**, 34**	5**, 6**	0**	1**	0**	1**	1*

-*=0.01
**=0.001

Spain	Targtype1=14							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	3**	73**, 79**	5**, 6**	0**	1**	0**	1**	0**
Terra Lliure	3**	79**	6**	0*	1**	0*	1	1

-*=0.01
**=0.001

UK:

United Kingdom	Targetype1=1							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Dissident Republicans	7*	3**	8**	0*	1**	0*	1	1
INLA	7**	7**	5*, 8**	0**	1**	0**	1	1
IRA	3**, 7**	7**, 8*	6**, 8**	0**	1**	0**	1**	1**
Protestant Extremists	1*, 2**	2**	5**	0**	3	0**	1**	1
UFF	1**	2*	5**	0*	1/2/3	0*	1	1

*=0.01
**=0.001

United Kingdom	Targetype1=2							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
INLA	1**	15**	5**	0*	1	0*	0	1
IRA	1**, 3**	14**, 21**	6**	0**	1**	0**	1	1*
Protestant Extremists	1**	15**	5**, 6**	0*	3	0*	1	1
UFF	1**	15**	5**, 6**	0**	1*	0**	1	1

*=0.01
**=0.001

United Kingdom	Targetype1=3							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Dissident Republicans	3**	23**	6**	0**	1**	0**	0	1
INLA	1**	25	5**, 6*	0*	3	0*	1*	1
IRA	1**, 3**	22**, 23**, 25**	5**, 6**	0**	1**	0**	1**	1**

*=0.01
**=0.001

United Kingdom	Targetype1=4							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
IRA	1**, 4**	27**, 29**, 34**	5**, 6**	0**	1**	0**	1**	1**

*=0.01
**=0.001

United Kingdom	Targetype1=14							
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Dissident Republicans	2*, 3**	67, 68, 73	5*, 6**	0**	1**	0**	1	1
INLA	1**	68**	5**	0*	3	0*	1	1
IRA	1**, 3**	67**, 69*, 74**, 76**, 79**	5**, 6**	0**	1**	0**	1**	1**
Protestant Extremists	1**	69**	5**	0**	3**	0**	1**	1
UFF	1**	69**	5**, 6*	0**	3*	0**	1**	1
UVF	1**	69**	5**	0**	3**	0**	1**	1

*=0.01
**=0.001

Analysis of Data:

Colombia, targtype1=1

Several trends emerge here that could not be seen in the purely group level data. The Left-Wing Guerrillas, the National Liberation Army (ELN), and FARC all used incendiary weapons, not bombs, a statistically significant number of times when targeting businesses. The three groups, however, do not have the same specific types of targets nor the same type of attack. ELN and the Left-Wing Guerrillas focused on mining corporations and locations, whereas FARC focused on retail stores and generic shops. Attacking mining ventures is interesting. It was an attack clearly meant to not destroy the mines, since it was armed assault rather than purely a bombing, menaing that the groups wanted to extract some kind of us from the mines. The Left-Wing Guerrillas used incendiary weapons to carry out armed assaults on their targets, while FARC mostly used the incendiary weapons for the simple bombings.

Interestingly, the EPL had little statistically significant data in type of attack, despite it being a target type that they targeted a large number of times. No single type of attack or level of lethality was truly statistically significant for the EPL. Their use of explosives was almost statistically significant, but not quite, hence its inclusion in the table. They also chose to target farms, rather than the more typical business interests the rest of the groups chose to attack. This makes some sense, since the EPL's socialist ideology impresses upon it the importance of lower class control of the means of production, of which farms are a major factor in Latin America. Their choice of using hostage taking, the most prominent yet still not significant attack type, makes sense, as it allowed them to seize land or money from farmers to continue financing their anti-government operations. The EPL's lethality rating was also quite different than the rest. Every other group, when attacking businesses, had very low numbers killed compared to number injured, while the EPL did not significantly kill or injure in a certain ratio.

Unlike all other groups in Colombia involved in significant attacks on businesses, M-19 targeted mainly multi-national corporations rather than locations of more local business. Their choice of weapon and method of attack was quite similar to the other groups, choosing firearms and bombs. All groups succeeded a statistically significant number of successes in addition to not performing attacks that lasted more than 24 hours nor performing attacks they did not expect to survive.

Colombia, targtype1=2

When targeting government buildings, members, and events terrorist organizations in Colombia overwhelmingly chose assassinations and bombings. Save for M-19 every single organization performed a proportionally large number of attacks on politicians or political rallies; M-19 attacked judges, attorneys, or courts a large percentage of the time, although they too still carried out many attacks on government buildings, the next most popular government target for attacks. M-19 also did not carry out a significant number of assassinations, one of the two most common attack types, instead performing armed assaults and bombings, the most common attack type against the government. The Extraditables performed a similar spread of attacks as M-19. At the purely organizational level, neither the ELN nor the EPL performed a significant number of bombings. Yet, when taking target type into account, these two groups performed significant numbers of bombings against government targets.

The Death Squad has, understandably, the highest level of lethality, focusing entirely on assassinations of politicians through use of firearms. This makes sense, seeking to cow politicians rather than any other government facility, as politicians are the most visible part of

government and have the power to most directly affect laws, it makes sense for them to be the targets of a terrorist organization focused on assassination.

FARC and ELN both targeted, in addition to politicians and political rallies, non-military government personnel. They both went after the prominent government figures, but also the bureaucrats, the individuals that helped operate the day to day functions of the Colombian government. FARC and ELN focused on attacking and breaking down the function of government through those that ran it, rather than interpreters of the law like M-19 targeted or government buildings as M-19, the Extraditables, and the EPL attacked.

As with the EPL and business targets, the CGSB had no statistical predilection toward any level of lethality, although they leaned ever so slightly towards fewer killed compared to wounded. As an organization that generally functioned to coordinate other terrorists in Colombia, their spread of attack types, weapon choices, and specific targets was quite generic compared to the other groups, targeting politicians with bombings or firearms. FARC's lethality level was split between slightly significant low lethality and slightly significant high lethality. The percentage of suicidal attacks, extended attacks beyond 24 hours, and successes stayed the same as with business targets.

Colombia, targtype1=3

Here, the trend of firearms and bombs being the most used weapons continues. The spread of different kinds of attacks is smaller in this category, with only two types of attacks represented, save the assassinations carried out by Narco-Terrorists. There is also a very small variation on specific choice of targets, most organizations choosing to target police buildings or police forces. FARC is the only organization here to not do one of those two, choosing to also

attack police patrols. This makes sense given FARC's virtual state of war with the state of Colombia, but it is interesting that other terrorist organizations in Colombia did not also attack police patrols. Every single organization overwhelmingly chose to use firearms when assaulting police buildings or officers, and to a slightly lesser but still significant extent used explosives as well. As such, the most common attack types against the police were assault or bombings.

The lethality in this case was on average much higher than compared to previous types of targets, owing the almost certainly more deadly encounters that resulted when attacking the police. Unlike previous sets of data, two organizations had no statistically significant level of lethality, the CGSB and the Left-Wing Guerrillas. Both organizations also trended slightly toward the lowest level of lethality. Success rate, rate of suicidal attacks, and rate of extended attacks all stayed at the same spread as in previous instances.

Colombia, targtype1=4

When attacking the military, all organizations other than the CGSB performed a significant number of armed assaults upon the military. As with the police targets, the lethality level was quite high, in this case all groups other than the Ricardo Franco Front killing many more than they injured. With the military as the target, this is a logical choice, as leaving soldiers alive means they are able to respond, so they need to be eliminated to ensure the maximum number of organization members can return from the attack. All organizations other than FARC primarily targeted military patrols, hitting small groups of soldiers with firearm attacks and in some cases bombings. The Ricardo Franco Front also targeted non-convoy military transports in addition to military patrols. FARC, though, primarily targeted military personnel in all forms, not

just when in units patrolling. This indicates, more so than the other terrorists, FARC sought out groupings of soldiers to attack them wherever they might have been.

While the percentage of extended attacks and suicides staid the same as the purely organizational data, the Ricardo Franco front both had low lethality and failed statistically more than it succeeded. This shows that they were quite ineffectual against attacking military targets, despite their preferred use of bombings when seeking to harm the government. As the Ricardo Franco Front is a spin-off group from FARC, this may be evidence that they did not have access to the same institutional memory FARC had in regards to attacking military targets. The spread of data mirrors the spread in the purely organizational organized dataset.

Colombia, targtype1=14

This is a most interesting dataset, as several of the organizations have no statistically important chosen level of lethality. All organizations that targeted civilians tended to succeed much more often than fail, but there does not seem to have been planning put in to determining the amount of casualties the terrorists desired, seemingly killing or wounding at random. Most attacks were carried out using firearms, which could explain this apparent randomness. The terrorists would not have control over the number of civilians that they could kill once an attack actually began unless they were performing a siege or other attack that contained targets in a small area. Neither was the case here, with the majority of attacks being armed assaults. While cities themselves were the most common target to harm civilians, the Death Squad attacked many laborers, specifically identified as such in the data, in order to terminate specific targets. The ELN repeatedly targeted vehicles with their attacks, and Narco-Terrorists targeted many plazas and town centers with their attacks. Like the ELN, the Left-Wing Guerrillas targeted

vehicles, but they specifically used incendiary attacks to do such, rather than firearms as the ELN used.

Each organization, in attacking civilians, is clearly seeking to wear the government and the people down through attacks. Given the majority of the attacks are targeted purely at cities in general, no specific target, they are almost certainly meant to sow terror beyond any other objectives. Each organization succeeded the majority of the time, in addition to planning to survive and not extending attacks beyond 24 hours. The spread of data mirrors the spread in the purely organizational organized dataset.

Colombia, targtype1=19

Neither the ELN, nor FARC, nor M-19 performed a significant number of incendiary attacks when only the purely organizational organized dataset is analyzed. Yet when targeting transportation, each organization used a large percentage of incendiary weapons in their attacks. Said attacks were also all similar, each using both armed assault or bombings to target buses. The only difference in how all the attacks were carried out is that FARC did not use a significant number of firearms in their attacks, focusing on incendiary devices and bombs. The spread of the lethality, duration of attacks, successes, and rate of suicidal attacks mirrors the spread in the purely organizational organized dataset.

Colombia, targtype1=21

The ELN, FARC, and the CGSB had nearly entirely identical spreads of data. All three succeeded at the majority of their attacks, all three performed a statistically significant number of bombings, all three used bombs as their preferred weapons, all three did not extend attacks

beyond 24 hours nor intend to die during the course of their attacks, and all three had a low level of lethality for their attacks. The one point of difference is that the CGSB chose to focus on electrical utilities rather than oil based utilities as the other two chose to focus on. The low lethality makes sense as these attacks were all focused on utilities, locations that while important rarely had large numbers of people in or nearby themselves.

Philippines, targtype1=1

The MNLF's and the Abu Sayyaf Group's data when targeting businesses matches with the organized purely by organization main dataset. Both organizations utilized primarily bombs or firearms to bomb or assault businesses. The NPA, on the other hand, while utilizing bombs and firearms as well, heavily used incendiary devices in carrying out its own attacks. This is not a weapon that was significantly used in terms of the dataset as a whole, without accounting for target choice, which does indicate that the NPA tailored the weapons it used to the targets it attacked.

In terms of attack choice, while the Abu Sayyaf Group and the MNLF both performed many bombings, the Abu Sayyaf Group also performed a significant number of kidnappings. Abu Sayyaf notoriously performs many kidnappings and ransoms of all those that they can. The NPA performed mostly armed assault and infrastructure attacks. This makes sense for the NPA, as they are a resistance force that is based around seriously changing government and instituting communist principles, and businessmen are a symbol of the oppression of the lower class in communist terms. This is shown in the way that the NPA targets Industrial facilities, farms, mining facilities, and construction facilities. They target businesses that often employ large numbers of individuals but pay very little. The Abu Sayyaf Group targets much softer targets,

targeting mostly retail stores and restaurants, places that will have minimal security but large numbers of people and thus large numbers of potential targets. They also attack farms, to a lesser but still significant extent. The MNLF targets both Industrial facilities and entertainment facilities such as stadiums and casinos. There did not seem to be any trend that correlated with the MNLF's desire for Moro self-governance, beyond simply sowing terror to try to push the government to respond.

All three organizations were not very lethal, generally injuring more than they killed. In addition, all three organizations were successful the majority of the time, did not carry out attacks that they did not expect to survive, and did not drag out attacks for longer than 24 hours. This last one is particularly interesting, because it seems to be at odds with the Abu Sayyaf Group's proclivity for kidnapping.

Philippines, targtype1=2

In general, each organization that targeted the government a statistically significant number of times performed their attacks in a way consistent with the aggregate data sorted only by organization rather than also by target choice. The MNLF overwhelmingly chose bombings when targeting the government, the NPA chose assassinations or armed assault when targeting the government, and the Abu Sayyaf Group primarily kidnapped government targets. The Abu Sayyaf Group and the MNLF used primarily firearms and bombs, while the NPA almost exclusively used firearms.

In choosing targets, the MNLF focused its efforts on bombing government buildings or facilities. This is an action in line with their ideology, as they sought self-rule, and damaging the government that they saw as oppressing them is a logical action. The NPA primarily targeted

government officials and politicians. This difference shows the difference in ideology between the NPA and MNLF in how “appropriate” targets were selected, the NPA choosing to kill government members so that they could be replaced whereas the MNLF sought to damage their buildings and drive them out, not caring about who ran the Philippines as long as the Moro were self-governing. The Abu Sayyaf Group chose to attack the same targets as the NPA, which given their proclivity for kidnappings makes logical sense.

The Abu Sayyaf Group, just as when attacking businesses, performed a large portion of their attacks as kidnappings. Unlike the MNLF, which ostensibly has the same goal of a separate Moro nation, the Abu Sayyaf Group targeted government officials and politicians, like the NPA. The Abu Sayyaf Group also dragged out their kidnappings when targeting the government, with exactly half of their attacks lasting longer than 24 hours and half lasting less than 24 hours. This seems the indicate that the Abu Sayyaf group itself was not determining how long it would hold hostages, but rather shows that hostage negotiation by the Filipino government was not a quick process all of the time.

Surprisingly, the MNLF was only weakly successful, just barely statistically significant, in addition to not having any specific level of lethality that was truly statistically significant. They were generally, but not significantly, leaving more wounded than dead in their attacks on government buildings. Given that it is nearly a random distribution between supremely lethal and barely lethal, their attacks were presumably targeted on a specific building first, without concern for occupants of said building.

None of the groups performed significant numbers of attacks that they did not intend to survive, and all groups were successful more than average. Other than the Abu Sayyaf Group, no attacks significantly lasted longer than 24 hours. The lethality for the NPA and the Abu Sayyaf

Group matched with the purely organizational level dataset, low lethality for the Abu Sayyaf Group and high lethality for the NPA.

Philippines, targtype1=3

The NPA's data in this dataset is identical to the parent dataset. When attacking the police, they primarily chose to target security forces or officers, using both firearms and bombs, in armed assaults or assassination. They were very lethal in their attacks, and tended to succeed while seeking to survive their attacks. Their attacks did not extend beyond 24 hours.

Philippines, targtype1=4

The attack types, weapon choices, and success rate were all similar among the organizations that targeted a significant number of military targets. All the organizations in question, the Abu Sayyaf Group, the BIFM, the MILF, the MNLF, and the NPA, performed significant numbers of armed assaults upon military targets. In addition, the Abu Sayyaf Group, the BIFM, and the NPA had a large proportion of their attacks that were carried out as bombings against military targets. All the organizations consistently succeeded and none carried out extended or suicidal attacks.

There was an intriguing spread of data for each organization's lethality. While the BIFM and the NPA statistically carried out a majority of low lethality attacks, neither the MILF and the Abu Sayyaf Group carried attacks with consistent lethality. They weakly trended toward low lethality attacks, but not in a statistically significant way. The MNLF's attacks' specific levels of lethality were indistinguishable from random chance in regards to high and low lethality. This is

interesting, as it indicates that the MNLF didn't choose military targets with the number of soldiers guarding the target in mind.

The MNLF, the BIFM, and the NPA all chose the same specific military targets: military bases, military units/patrols, and generic personnel. The MNLF quite clearly did not plan attacks to yield maximum causalities, almost certainly choosing the targets without thought for how many soldiers they would face. The NPA, unusually, was not very lethal when targeting soldiers, yet were when targeting the police and non-military government forces. This may be due to the military possessing training and experience when dealing combat situations, allowing them to minimize casualties, or it may be due to some other not as apparent factor. The Abu Sayyaf Group and the MILF also targeted military units/patrols and generic personnel, but did not attack military bases.

Philippines, targtype1=14

Few groups had a statistically significant level of lethality when targeting civilians. Neither the MILF, the MNLF, nor the NPA were consistent in how lethal their civilian attacks were. They weakly leaned toward attacks with a low level of lethality, but not enough to be statistically significant. The BIFM was statistically minimally lethal, but only at $p=0.01$. The Abu Sayyaf Group was the only terrorist organization in this sub-dataset that consistently and significantly was minimally lethal. This makes sense, as the Abu Sayyaf Group performed mostly kidnappings when attacking civilians, which necessitate few if any casualties in order to be successful. The NPA, the MNLF, the MILF, and the BIFM all focused primarily on armed assaults when targeting civilians. The MNLF, the MILF, and the BIFM also focused on bombings. The NPA, not performing bombings, mainly utilized firearms for their armed assaults.

The Abu Sayyaf Group also primarily utilized firearms. The MNLF, the MILF, and the BIFM utilized primarily firearms and bombs.

When choosing targets, the Abu Sayyaf Group chose to focus on specific individuals and laborers when performing kidnappings. The NPA also focused on laborers, and to a lesser extent specific individuals, but also directed many of their attacks against villages and towns as a whole. The BIFM and MNLF also focused on attacking towns and villages, although the MNLF also targeted large public areas, like camps, public gardens, etc. The data only shows that the MILF attacked civilians, but doesn't specify the specific civilian targets that it chose.

All of the organizations in question succeeded the majority of the time, and none of them were suicidal in how they carried out their attacks. They all, save for the Abu Sayyaf Group, did not extend their attacks beyond 24 hours. The Abu Sayyaf Group, while not doing it a statistically significant amount of time, trended towards long, drawn out attacks, which makes perfect sense given their propensity to kidnap civilians.

Philippines, targtype1=21

The only Filipino terrorist organization to significantly target utilities was the MNLF, which used primarily bombs and bombings to attack power plants. They succeeded the majority of the time, had low levels of lethality, and did not drag their attacks out longer than 24 hours nor commit attacks intending to not survive them.

Spain, targtype1=1

When attacking business, ETA, GRAPO, and Terra Lliure all consistently used bombings when carrying out attacks on businesses in Spain. ETA, GRAPO, and Terra Lliure utilized

bombs as their primary weapon choices. Although use of firearms was significant for ETA and GRAPO, they did not significantly perform any number of attacks that would utilize firearms. This is presumably because, while they didn't perform any single kind of attack a significant number of times, they did perform many different kinds of attacks that all saw them use firearms, which thus caused firearms to be significantly used but no significant attack type to go along with that. In addition to all the organizations making use of bombings, a large proportion of each organization's targets included banks. ETA also targeted a large number of retail stores and multinational corporations.

None of the organizations performed suicide attacks, nor did they perform attacks that lasted longer than 24 hours. While all groups succeeded the majority of the time, Terra Lliure only succeeded significant at p=0.01 and not at p=0.001. Like the parent dataset, ETA was shown to target more foreigners than could be due to random chance. GRAPO, too, attacked more foreigners than could be due to random chance, but not quite enough to be statistically significant. Terra Lliure, interestingly, targeted only native Spaniards when targeting businesses, although it's not significant simply because the number of observations was a little too low.

Spain, targtype1=2

Just as when attacking businesses, when attacking government members or buildings ETA, GRAPO, and Terra Lliure each focused on using bombings. In addition, each organization focused their attacks upon government buildings or facilities, with GRAPO solely attacking such targets. ETA also targeted politicians and government personnel, while Terra Lliure targeted judges in addition to government buildings. ETA also focused on armed assaults, which neither Terra Lliure nor GRAPO focused on, using firearms in addition to bombs as favored weapons.

None of the three organizations performed attacks that lasted longer than 24 hours, and none of the organizations performed suicide attacks. All three organizations were statistically minimally lethal, just as their parent dataset showed. Interestingly, though, Terra Lliure did not succeed a statistically significant amount of the time, merely trending toward success but not actually reaching it a clear majority of the time.

Unlike the parent dataset, when attacking the government, the organizations injured or killed more Spaniards that foreigners. This makes sense, since the Spanish government was operated by native Spaniards at the time. However, it is interesting that Terra Lliure affected a statistically significant amount of foreigners in their attacks, well more than could have been explained by random chance. While GRAPO did not statistically affect more Spaniards than could be assumed by random chance, this was merely because of the number of observations. Every single attack against government by GRAPO affected only Spaniards.

Spain, targtype1=3

When attacking the police, ETA and GRAPO used the same types of attacks, targeted the same specific police targets, succeeded statistically well more than they failed, did not carry out suicide attacks, and did not carry out attacks that lasted for longer than 24 hours. Both ETA and GRAPO focused on assassinations and armed assaults, and both used primarily firearms, although ETA did use some bombs for these attacks. The specific police target both organizations carried out the majority of their attacks against was against police officers primarily, rather than against any police institutions or buildings.

Unlike in the parent data set, GRAPO was quite lethal when targeting the police, killing many more than they wounded. ETA, on the other hand, wounded more police than they killed.

This makes some sense, as while ETA was fighting the government and wanting independence, they weren't set on outright removing the Spanish government's power. GRAPO was a group that was founded in order to bring down the fascist Franco regime, meaning they were set on defanging the government and limiting its ability to project force and enforce its own laws. This origin, though, would presume that GRAPO would work to target mostly Spaniards rather than foreigners, but this was not the case, as they targeted entirely non-Spaniards when hitting police forces. This is interesting, as it may be a problem in the dataset or it may have been a nationalist style push to attack non-native police officers. This could possibly warrant more research.

Spain, targtype1=4

Only ETA targeted the military a significant number of times. When attacking the military, they used both assassinations and bombings. They primarily used firearms and bombs when carrying out their attacks. The specific targets they chose were military bases and military personnel. Their lethality was statistically low, though, indicating that their attacks injured well more than they killed, almost certainly due to the bombings injuring large numbers without killing many. Logically, as the Spanish military was primarily Spanish, ETA hit mostly Spaniards when targeting the military. They did not perform suicidal attacks, nor did ETA perform attacks that extended past 24 hours.

Spain, targtype1=14

When targeting civilians, the trend of using bombs continued, both ETA and Terra Lliure overwhelmingly choosing to bomb civilian targets rather than use any other method of attack. Once again, as when targeting businesses, ETA had both firearms and bombs as significant weapons choices. Once again, this is probably due to ETA using firearms for many different

types of attacks but not choosing any type of attack that often, save for bombings. Both ETA and Terra Lliure targeted mostly public areas with their attacks, which makes sense for bombings. ETA also targeted vehicles and transportation. Both groups performed statistically low lethality attacks, and did not extend their attacks beyond 24 hours.

Terra Lliure did not succeed a statistically significant amount of the time, only weakly trending toward successes. Terra Lliure also targeted entirely Spaniards in their attacks on civilians, while ETA targeted many more non-Spaniards than could be due to chance with their attacks on civilians.

United Kingdom, targtype1=1

In the United Kingdom, Republican terrorists tended to perform infrastructure attacks when targeting businesses, destroying structures to damage long usability of the region. Unlike in the parent dataset, where only the IRA performed a significant number of infrastructure attacks, Dissident Republicans, the INLA, and the IRA performed infrastructure attacks when targeting businesses. Loyalist organizations did not have a single trend of attack types. Protestant Extremists focused on armed assaults primarily, with assassinations also significant but only at the p=0.01 level. The UFF focused almost solely on assassinations. The two loyalist organizations also both utilized almost only firearms for their attacks. The Republican organizations primarily utilized incendiary weapons in their attacks, although the IRA also extensively utilized bombs and the INLA utilized firearms at only the p=0.01 level.

The loyalist groups overwhelmingly targeted restaurants, although the UFF only did so at the p=0.01 level. The IRA, and the splinter organization the INLA, focused on targeting retail and generic shops. At the p=0.01 level, the IRA also significantly targeted hotels. Dissident

Republicans almost exclusively targeted banks with their attacks. The Republican organizations were all consistently minimally lethal, killing much less than they injured. The loyalist organizations were mixed, with Protestant Extremists weakly trending toward high levels of lethality while the UFF was equally split between low, high, and medium lethality. Interestingly, this seems to indicate that the UFF did not plan how lethal their attacks would be but instead let them occur as they might, not caring about the direct human casualties.

While none of the organizations committed a significant number of suicidal attacks or attacks that lasted longer than 24 hours, their number of successes was much more varied. Dissident Republicans, the INLF, and the UFF all did not succeed a significant number of the time, merely weakly trending toward success. This matches fairly well with the parent dataset for Dissident Republicans and the INLF, but not for the UFF. The IRA and Protestant Extremists both succeed the majority of the time. While all the groups trended toward targeting only British businesses, it was merely a weak trend for all but the IRA.

United Kingdom, targtype1=2

When attacking non-military government targets, the INLA, the IRA, Protestant Extremists, and the UFF all focused primarily on assassination; the IRA also performed a significant number of bombings. The INLA, Protestant Extremists, and the UFF all made extensive, and in the INLA's case nearly exclusive, use of firearms when performing assassinations. Protestant Extremists and the UFF utilized bombs as well, while the IRA utilized solely bombs for its bombings and assassinations that it carried out. The INLA, Protestant Extremists, and the UFF all carried out their attacks primarily against politicians and political group meetings. While these are government targets, it makes sense for loyalist organizations to

target politicians they saw as too soft or conciliatory, spoiling chances for compromise. The IRA primarily targeted judges and government buildings, interestingly. They did not seem to share the desire for killing politicians that the other organizations possessed, but they made sure that their attacks would leave much more lasting physical damage by attacking government buildings.

As in the parent dataset, none of the organizations that significantly targeted government targets carried out suicidal attacks or attacks that extended beyond 24 hours. As when targeting businesses, few of the organizations carried out attacks with consistent levels of success. None of the organizations succeeded a statistically significant percent of the time, with the INLA even trending toward more failures than successes. None of the organizations save the IRA statistically targeted British and North Irish citizens more often than random, although all trended weakly in that direction.

The IRA consistently was minimally lethal, as was the UFF at the p=0.01 level. Protestant Extremists trended towards high levels of lethality, although only weakly and insignificantly. The INLA trended weakly toward low levels of lethality, not enough to be statistically significant. The INLA's low level of lethality is presumably because of their many failures at carrying out their objectives of killing individuals.

United Kingdom, targtype1=3

The Republican organizations that targeted the police generally used bombs as a primary weapon of attack, the IRA and Dissident Republicans using it heavily and significantly at the p=0.001 level while the INLA only used them significantly at the p=0.01 level. The INLA and the IRA also significantly utilized firearms in their attacks upon the police. Both the INLA and

the IRA used assassinations as a primary attack of choice, although the IRA also utilized bombings at equally significant level. Dissident Republicans focused exclusively on bombings when targeting the police. The INLA had no single specific target that it significantly chose to attack, although it weakly trended toward targeting general police forces above more specific targets. Dissident Republicans extensively targeted police patrols, while the IRA targeted police buildings, police patrols, and general police forces.

Out of the three organizations only the INLA did not significantly, at the p=0.001 level, avoid suicidal attacks and attacks with duration over 24 hours, merely having those qualities at the p=0.01 level. Dissident Republicans and the IRA had significantly low lethality, while the INLA weakly, but not significantly, trended towards high levels of lethality. Only the IRA succeeded a majorly significant proportion of time. The INLA succeed significantly only at the p=0.01 level, and Dissident Republicans trended weakly, but not significantly, towards failure in their attacks. The IRA consistently targeted only British or North Irish citizens, not foreigners, but the INLA and Dissident Republicans merely weakly yet not significantly trended towards attacking purely British or North Irish citizens.

United Kingdom, targtype1=4

Only the IRA significantly attacked the British military. This makes sense, as they were the best organized Republican force in North Ireland and thus were the only ones that risked direct military confrontation. Even still, they focused on assassinations and hijackings as their primary attacks, attacks that allowed them to either quickly remove a target or work to negotiate issues without having to resort to open combat. When targeting the military, the IRA primarily utilized firearms and bombs for their assassinations and hijackings. The IRA significantly

targeted military bases, military patrols, and general military personnel. Despite assassinations being common, the IRA's lethality was still significantly low, indicating that they injured more than they killed during assassinations. The IRA succeeded the majority of the time, virtually only targeted and affected British or North Irish citizens in their attacks, and did not drag a significant number of their assassinations or hijackings beyond 24 hours.

United Kingdom, targtype1=14

As expected for the divisive conflict in North Ireland, loyalist terrorist organizations, Protestant Extremists, the UFF, and the UVF, when targeting civilians focused their attacks on religiously identified targets. The IRA too did this, although only significantly at the p=0.001 level. INLA targeted specific individuals almost exclusively, while Dissident Republicans and the IRA had varied targets. The Dissident Republicans had no specific targets that they attacked a significant number of times, although they weakly trended towards general civilian targets, specific targets, and vehicles. As noted, the IRA chose religious targets, but it also significantly chose to target general civilians, marketplaces and squares, houses and residences, and large public areas.

Every organization save Dissident Republicans made extensive use of assassinations; the INLA, Protestant Extremists, the UFF, and the UVF only utilized assassinations when targeting civilians. The IRA also significantly utilized bombings when targeting civilians. Dissident Republicans made heavy use of bombings, and significantly employed armed assaults, but only at the p=0.01 level of significance. Every single organization made use of firearms when carrying out attacks on civilian targets, however Dissident Republicans only significantly utilize them at the p=0.01 level. No organization carried out attacks that lasted longer than 24 hours,

nor did any organization carry out suicide attacks, although the INLA only avoided these situations at the p=0.01 significance level.

While all the organizations trended toward more successes than failures, Dissident Republicans and the INLA both only trended weakly, not significantly. The IRA, Protestant Extremists, the UFF, and the UVF all succeeded a significant proportion of the time. In regards to lethality, Dissident Republicans and the IRA were significantly minimally lethal. The other Republican organization, the INLA, trended towards high lethality, but not enough to be considered significantly lethal. Protestant Extremists, the UFF, and the UVF were significant highly lethal, with Protestant Extremists and the UVF significantly highly lethal and the p=0.001 level and the UFF only significant at the p=0.01 level. Only the IRA significantly targeted primarily British or North Irish citizens, the other organizations merely weakly trended towards that without any significance.

Appendix 2: Charts organized by organization name and target type, uncertain

Colombia

Colombia	Targtype1=1	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Left-Wing Guerrillas	1, 2, 3	9	5**	0	1, 3	0	1	-
M-19	3**	3**, 7*	6**	0*	1**	0*	1	-
Narco-Terrorists	3**	3**	6**	0	1*	0*	1	-
ELN	3**	9, 11	6**	0**	1**	0**	1**	-
FARC	3**	7**, 11**	6**	0**	1**	0**	1**	-
Extraditables	3**	3**	6**	0*	1**	0*	1*	-

*=0.01
**=0.001

Colombia	Targtype1=2	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Death Squad	1**	15**	5**	0**	3**	0**	1**	-
Left-Wing Guerrillas	3**	17, 18	6**	0	1	0	0	-
Narco-Terrorists	1**	14**	5**	0	3**	0	1	-
FARC	1**, 3**	18**	5**, 6**	0**	1**	0**	1**	-
CGSB	6**	15**	5**	1	1*	0*	1	-

*=0.01
**=0.001

Colombia	Targtype1=3	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Left-Wing Guerrillas	3**	22*	6**	0	1	0*	1	-
M-19	2*	22, 25	5**	0*	1	0*	1*	-
Narco-Terrorists	3**	22, 23	6**	0	1	0	1	-
FARC	3**	22*, 25**	5**, 6**	0**	1**	0**	1**	-

*=0.01
**=0.001

Colombia	Targtype1=4	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
EPL	3	27, 34	6**	0		0	1	-
FARC	2**, 3**	29**, 34**	5**, 6**	0**		0**	1**	-
Ricardo Franco Front	3	27, 29	5, 6	0		0	1	-

*=0.01
**=0.001

Colombia	Targtype1=14	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Death Squad	1**	67**, 82**	5**	0**	3**	0**	1**	-
ELN	3**	67**, 68**	5**, 6**	0**	1*	0**	1**	-
FARC	2**, 3**	67**	5**, 6**	0**	1**	0**	1**	-

*=0.01
**=0.001

Colombia	Targtype1=19	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
M-19	7**	99**	8**	0**		0**	1**	-
ELN	3**	99**	6**, 8**	0**		0**	1*	-
FARC	3**, 7**	99**	6**, 8**	0**		0**	1**	-

*=0.01
**=0.001

Colombia	Targtype1=21	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ELN	3**	108**	6**	0**		0**	1**	-
FARC	3**	107**	6**	0**		0**	1**	-

*=0.01
**=0.001

Philippines

Philippines	Targtype=1	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Abu Sayyaf Group	3**	2**, 7**	5*, 6**	0*	1**	0**	1**	-
BIFM	3**	7**	6**	0*	1**	0**	1	-
MNLF	3**	1, 5, 11	6**	0	1*	0	1	-
NPA	7**	9*, 10**, 12**	5**, 8**	0**	1**	0**	1**	-

*=0.01
**=0.001

Philippines	Targtype=2	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Abu Sayyaf Group	3**	18**	5**, 6**	0*	1**	0**	1*	-
MILF	2*, 3**	18**	5**, 6**	0**	1*	0**	1*	-
NPA	1**	18**	5**	0**	1, 3	0**	1**	-

*=0.01
**=0.001

Philippines	Targtype=3	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
NPA	1**, 2**	25**	5**	0**	3*	0**	1**	-

*=0.01
**=0.001

Philippines	Targtype=4	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
BIFM	3**	34**	6**	0*	1**	0*	1	-
NPA	2**, 3*	29**, 34**	5**, 6**	0**	3**	0**	1**	-

*=0.01
**=0.001

Philippines	Targtype=14	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Abu Sayyaf Group	3**, 6**	67**, 74**	5**, 6**	0**	1**	0**	1**	-
MILF	2**, 3**	67**, 74**	5**, 6**	0**	1**	0**	1**	-
NPA	2**	67**, 73*, 77*	5**	0**	3*	0**	1**	-

*=0.01
**=0.001

Philippines	Targtype=21	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
BIFM	3**	107**	6**	0**	1**	0**	1**	-
MILF	3**	107**	6**	0**	1**	0**	1	-

*=0.01
**=0.001

Spain

Spain	Targtype1=1	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	3**	3**, 4**	6**	0**	1**	0**	1**	0**
Terra Lliure	3**	3**, 5**	6**	0	1**	0	-	1

*=0.01
**=0.001

Spain	Targtype1=2	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	1**, 3**	15**	5*, 6**	0**	1**	0**	1**	1
Terra Lliure	3**	21**	6**	0*	1**	0*	1	0**

*=0.01
**=0.001

Spain	Targtype1=3	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	1**, 3**	25**	5**, 6**	0**	1**	0**	1**	1
GRAPO	3*	22, 25	5**, 6**	0*	1	0*	1	1

*=0.01
**=0.001

Spain	Targtype1=4	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	3**	27**, 34**	5*, 6**	0**	1	0**	1**	1

*=0.01
**=0.001

Spain	Targtype1=14	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
ETA	3**	67**, 79*	6**	0**	1**	0**	1**	1

*=0.01
**=0.001

United Kingdom:

United Kingdom	Targtype1=1	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
IRA	3**	7**	6**	0**	1**	0**	1	1

*=0.01
**=0.001

United Kingdom	Targtype1=2	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
INLA	1, 3	15, 18	6**	0	1	0	-	1
IRA	1**	21**	5**, 6**	0**	1**	0**	1	1

*=0.01
**=0.001

United Kingdom	Targtype1=3	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
Dissident Republicans	3*	22, 25, 26	6**	0*	1**	0*	0	1
IRA	3**	23	6**	0**	1**	0**	1*	1

*=0.01
**=0.001

United Kingdom	Targtype1=4	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
IRA	1*, 6**	29**, 34**	6**	0**	1*	0**	1**	1

*=0.01
**=0.001

United Kingdom	Targtype1=14	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
IRA	1**, 3**	67**, 69**	5**, 6**	0**	1**	0**	1	1
Protestant Extremists	1*, 3**	69**	5**, 6**	0*	1**	0*	1*	1
UFF	1**	67**, 69**	5*, 6*	0*	1**	0*	1*	1
UVF	3**	68*, 84*	6**	0*	1**	0*	1	1

*=0.01
**=0.001

United Kingdom	Targtype1=17	uncertain						
gname	*attacktype1*	*targsubtype1*	*weaptype1*	*extended*	*lethality*	*suicide*	*success*	*natlty1*
UVF	1, 2	93	5**	0	3	0*	1	1

*=0.01
**=0.001

Analysis of Data:

Colombia, targtype1=1

The spread of data is quite different between the uncertain data and the certain data. Left-Wing Guerrillas didn't have any single attack type that emerged as prominent, nor was their specific target or weapon choice remotely similar to the certain data. The other organizations in this dataset, M-19, Narco-Terrorists, the ELN, FARC, and the Extraditables, had similar attack types to the certain dataset. The Narco-Terrorist data from both datasets is identical, indicating that these attacks were almost certainly committed by Narco-Terrorists and the uncertainty is unwarranted. Interestingly, the majority of the uncertain attacks for

targtype1=1 are bombings. This seems to indicate that these bombings weren't claimed, or at least the perpetrators were not caught at the scene. Like the Narco-Terrorists, M-19 and the Extraditables both targeted the same specific targets in the uncertain dataset and in the certain dataset, although the Extraditables only targeted banks rather than banks and retail and generic shops. They also possessed the same low lethality, similar lack of suicide attacks, similar lack of extended duration attacks, and similar successes. Other than Left-Wing Guerrillas, all organizations in this dataset possessed the same *lethality, extended, success,* and *suicide* as in the certain dataset.

FARC targeted retail and generic shops in both the certain and uncertain datasets, but in the uncertain dataset they also attacked a significant number of entertainment businesses, something they weren't shown to focus on using the certain data. The ELN's specific target choices in the uncertain dataset was completely different from its choices in the certain dataset. In the uncertain dataset, rather than targeting banks or mining the uncertain ELN attacks were directed against farms and entertainment businesses. This is interesting, as it seems to indicate that these attacks may not have been actually perpetrated by the ELN since the targets were quite divergent from their known targets.

Overall, other than the ELN and Left-Wing Guerrillas, this dataset seems to contain many observations that match well with the certain dataset and as such indicate that these attacks are most likely to have been perpetrated by who was attributed them. There are several instances of attack patterns wildly diverging, and these can thus be safely assumed to not have been carried out by, if not the organization at all, the leadership of the organization.

<u>Colombia, targtype1=2</u>

Unlike in the certain dataset, the specific targeting of politicians or political rallies was not as well represented in this dataset. The CGSB and Death Squad both still heavily focused on that specific target, FARC and Narco-Terrorists did not. In addition, there were a significant number of uncertain attacks attributed to Left-Wing Guerrillas that targeted government targets. This was not the case with attacks known to have been carried out by Left-Wing Guerrillas, who did not significantly target government targets. These attacks purportedly carried out by Left-Wing Guerrillas also were failures most of the time. FARC's attack choices and weapon choices are both identical between certain and uncertain datasets, as are their *extended*, *lethality*, *suicide*, and *success* data. Purported Narco-Terrorist attacks were focused on judges, while known Narco-Terrorist attacks focused on politicians and political events. Purported Narco-Terrorist attacks were also almost exclusively assassinations, which does match with known Narco-Terrorist attacks being either assassinations or bombings, but the fact that the targets were quite different makes it questionable that Narco-Terrorists actually carried out these attacks. The purported Narco-Terrorist attacks were much more lethal, which seems to indicate less collateral damage given their propensity for assassinations with firearms in the uncertain dataset.

The uncertain and certain data points for the Death Squad were identical, which is a good indication that those attacks probably were carried out by the Death Squad. Although several other organizations did carry out similar attacks, the Death Squad was consistently more lethal than all other terrorist organizations in Colombia that significantly targeted government targets. Conversely, the supposed CGSB attacks in the uncertain dataset were almost exclusively kidnappings, something they did not do in any significant amount in the certain dataset. It is also intriguing that the CGSB's uncertain attacks lasted more than 24 hours, although not a significant enough percentage to be significant at $p=0.01$ or $p=0.001$. It seems unusual that a

definite suspect could not be determined for kidnappings that lasted more than 24 hours, so this may be due to some errors in the data recording rather than a significant point.

Colombia, targtype1=3

When targeting the police, the purported Left-Wing Guerrillas attacks were quite similar to the certain attacks. While not using armed assault, the uncertain Left-Wing Guerrillas attacks were all bombings against police buildings, using bombs to do so. As with the certain dataset, the Left-Wing Guerrillas succeeded the majority of the time, were minimally lethal, and did not carry extended or suicide attacks. M-19 purported attacks in the uncertain dataset are nearly identical to those in the certain dataset, although the uncertain dataset has several general police personnel targets rather than just police buildings as in the certain dataset.

The Narco-Terrorists were not as lethal in the uncertain dataset, injuring well more than they killed. And while they did make use of bombs and bombings, just as in the certain dataset, they neither targeted general police personnel nor did they use assassinations. The uncertain attacks focused on police buildings and patrols, something they didn't target often in the certain dataset. FARC is virtually identical to its certain dataset information. All in all, there was not enough similar or dissimilar information in these attacks to make any judgements about the validity of the supposed perpetrators.

Colombia, targtype1=4

The EPL's purported attacks in the uncertain dataset wildly differed from those it is certain to have committed. They were primarily, although not significantly, bombing attacks, whereas in the certain dataset the EPL focused on armed assault. In addition, the certain attacks focused on military units or patrols while the uncertain attacks focused on barracks and general personnel. The lethality of the uncertain EPL attacks was split between high and low lethality, rather than the almost exclusively high lethality of their certain attacks. FARC carried out virtually identical attacks, save that they also targeted military units and convoys rather than just general military personnel. Like FARC, the Ricardo Franco Front carried out the same kinds of attacks, bombings, against some of the same targets, convoys and patrols, while also targeting military bases and barracks. In what it probably an error in recording information, it used both firearms and bombs for its bombings. It's lethality was split between high and low lethality, while in the certain dataset the Ricardo Franco Front's lethality was low.

Colombia, targtype1=14

The Death Squad, yet again in an uncertain dataset, matched nearly identically with the data in the certain dataset. The only difference was that instead of targeting random civilians and laborers they were purported to target random civilians and labor unions. Labor unions are a similar enough target to laborers that it is quite probable these attacks were carried out by the Death Squad rather than anyone else.

Both FARC's and the ELN's uncertain attacks were carried out primarily through bombings, which neither of them used against civilians in any significant degree in the certain dataset. The ELN's purported attacks also targeted more specific individuals than they did in the certain dataset. In addition, FARC's uncertain lethality was much lower than its certain lethality.

Save for that, success rate, duration of attacks, and suicide attack rate were all constant between certain and uncertain datasets.

Colombia, targtype1=19

Quite unusually, both the purported FARC and M-19 attacks were mostly infrastructure attacks, whereas in the certain dataset both had focused on armed assaults and bombings. FARC's uncertain data also included bombings, but the overlap with infrastructure attacks is intriguing and radically different from their certain data. The ELN only had purported bombings in this dataset, rather than a mix of bombings and armed assaults, and as such only had a significant weapon choice of bombs and incendiary devices. All three organizations, M-19, the ELN, and FARC all used incendiary weapons heavily in both certain and uncertain datasets. Other than that, the data was almost all completely identical between the two sets of data.

Colombia, targtype1=21

Save for FARC's decisions to target the power grid rather than oil related establishments, the data is identical between the certain and uncertain datasets.

Philippines, targtype1=1

Interestingly, a significant proportion of the attacks attributed to the BIFM were targeted against businesses, a target that the BIFM did not significantly target in the certain dataset. The attributed BIFM attacks were mostly bombings targeting retail and generic stores, and most of the attacks were successes that were minimally lethal. The purported Abu Sayyaf Group and MNLF attacks were also primarily bombings. The purported NPA attacks were primarily

infrastructure attacks. The three organizations that are in both the certain and uncertain datasets do not have the multiple attack types in the uncertain dataset that they have in the certain dataset.

The NPA, the MNLF, and the Abu Sayyaf Group had nearly identical specific targeting as in the certain dataset, although the spread was smaller. Likewise for weapon choices for each organization, and all other variables save *targsubtype1*.

Philippines, targtype1=2

Several things stand out when looking at this dataset compared to the certain dataset, and that is the NPA's lethality, the Abu Sayyaf Group's specific method of attack, and the purported MILF attacks. The NPA had mixed lethality in the uncertain dataset, neither trending significantly toward high lethality or toward low lethality. In the certain dataset, the NPA was solidly extremely lethal. A significant proportion of the MILF's attacks in the uncertain datasets were targeted against the government, a target that they did not choose to target in the certain dataset. Despite the fact that it is a separatist/nationalist organization, the MILF does not target government buildings or personnel often, which is an interesting fact that this uncertain data highlights.

The Abu Sayyaf Group's purported attacks were primarily bombings, while their certain attacks were primarily kidnappings. The specific targets were the same, government personnel, but the choice of attack type was wildly different. However, given that the Abu Sayyaf Group made significant usage of bombs in the certain dataset, even when kidnapping government workers, it's highly likely that these uncertain attacks were performed by the Abu Sayyaf Group. In general, the other variables not yet mentioned were close to the same as the certain dataset, save for the Abu Sayyaf Group's lack of extended attacks in the uncertain dataset.

Philippines, targtype1=3

The data is virtually identical, save there isn't a significant number of bombs used in the uncertain dataset.

Philippines, targtype1=4

The NPA's uncertain data is nearly identical to its certain data, except for two points. The purported attacks did not contain a significant number of attacks against military bases and the purported attacks were much more lethal than the certain attacks. It is the same with the BIFM, virtually identical attacks. Because the BIFM and NPA are so similar to each other in target choices, attacks, etc. it is difficult to make any prediction about the validity of the purported attacker being the actual perpetrator.

Philippines, targtype1=14

The MILF and NPA have virtually identical spreads of data between the uncertain and certain datasets, other than slightly different target choices and for the NPA more highly lethal attacks. Their attack types and weapon choices are identical. The MILF, however, in addition to targeting random civilians also is purported to have targeted marketplaces and town squares. The NPA's purported attacks still targeted random civilians and laborers, but instead of targeting cities targeted vehicles. The latter is quite a large departure from their normal operations, as is the lethality. This seems to indicate that the NPA may not have been truly, or at least fully, behind many of the purported attacks.

The Abu Sayyaf Group had a number of purported attacks that were bombings and had a significant proportion of their attacks that used bombs, neither of which is the case in the certain dataset. The purported attacks were also focused on targeting marketplaces and town squares and random civilians. None of those fits in with the pattern of attacks that the Abu Sayyaf Group is seen to perform in the certain dataset, which is strong evidence that some of these attacks were not perpetrated by the Abu Sayyaf Group.

Philippines, targtype1=21

There were no purported MNLF attacks that targeted utilities, but there were purported attacks by both the BIFM and the MILF. Neither of those two organizations performed a significant number of attacks upon utilities in the certain dataset, and it is unlikely that these are thus perpetrated by them, or at least by the direct order of the organizations' leaders. Both reportedly used bombings to target electrical power stations, with low lethality and general success.

Spain, targtype1=1

The data in the uncertain dataset is nearly identical to the data in the certain data set, save the success rate and minor specific targeting of Terra Lliure. The uncertainty of these attacks, in ETA's case, doesn't appear to be due to any obvious factor of the attack, although it may be due to what specific establishments were hit, beyond what type of establishments they were. It could also be because these were perpetrated by disgruntled Basque separatists who were not directly following ETA's orders at the time of the attack. However, it is quite apparent that the attributed ETA attacks share the hallmarks of the certain ETA attacks.

In the case of the purported Terra Lliure attacks, while they were mostly bombings, they targeted industrial facilities and banks, rather than primarily banks as were targeted in the certain dataset. In addition, these success ratio was purely random in the uncertain dataset for Terra Lliure. This makes it seem more likely that at least some of these attacks were not performed by the Terrorist organization directly, but either by imitators or by members who acted without orders, to explain to incredibly low success rate achieved.

Spain, targtype1=2

The only differences between the uncertain and certain datasets were that the uncertain dataset contained fewer values for *targsubtype1*. All values in the dataset were the same as in the certain dataset.

Spain, targtype1=3

The main thing that seems important in this dataset is the fact that the purported GRAPO attacks were conducted with both firearms and bombs primarily, but that the only significant attack type is bombings at p=0.01. This indicates that there were lots of varied attack types that all used firearms and bombs, but weren't repeated. This wide spread of attacks is a good indication that the attacks attributed to GRAPO weren't attributed based on any patterns in relation to how GRAPO normally acted. As such, quite a few probably are not due to GRAPO, but were simply attributed to them due to the political climate in Francoist and immediately post-Francoist Spain at that time.

The purported ETA attacks were split between assassinations and bombings, rather than between assassinations and armed assaults as in the certain dataset. Other than that, the rest of

the data is nearly identical between the two datasets. These attacks are in line with standard ETA attacks against police targets, save for the bombings.

Spain, targtype1=4

Virtually no difference between uncertain and certain attacks, save that the purported attacks did not have a significant number of assassinations.

Spain, targtype1=14

ETA's purported attacks against civilians in the uncertain dataset are quite similar to their attacks in the certain dataset, save that they chose to target random civilians and public areas, rather than vehicles and public areas as in the certain dataset. In addition, the uncertain nationality targeting data is trending towards mostly Spanish targets, while the data for the certain dataset indicates that ETA targeted more non-citizens than could be due to random chance. Other than that, it is mostly similar to the certain dataset.

United Kingdom, targtype1=1

There is not a major difference between the uncertain and certain datasets for the IRA, save that the spread of data was much tighter. The IRA in the uncertain dataset only utilized bombings and only targeted retail and generic shops.

United Kingdom, targtype1=2

There were only two INLA observations in the dataset, both utilized bombs and one failed, one succeeded. The two observations are similar to the known INLA attacks in some

ways, but not in other ways. The IRA was virtually identical to the data from the certain dataset, simply not targeting judges and using firearms in addition to bombs. These attacks are similar enough to the IRA's certain attacks that they were probably committed by the IRA.

United Kingdom, targtype1=3

The IRA's uncertain dataset possesses only data points also within the spread of data in the certain dataset. It does not have as a wide a spread of data, only being bombing attacks against police patrols, but otherwise it is identical to the certain dataset. The purported Dissident Republican observations utilized bombs and bombings, just as in the certain dataset, but the specific targets were all different. Rather than police patrols, the purported Dissident Republican attacks focused on police buildings, general police forces, and prisons and jails. None of these are common targets with the certain dataset. These attacks have a good likelihood of not having been committed by the Dissident Republicans organization.

United Kingdom, targtype1=4

Unlike in the certain dataset, in the uncertain dataset the IRA focused almost entirely on bombings, and to a lesser extent assassinations, rather than assassinations and hijackings. The large number of kidnappings is exceedingly strange, not something the IRA did in any statistically significant percentage. These attacks may not have been orchestrated by the IRA, despite target choice being the same between certain and uncertain datasets. The issue is raised, then, of how these attacks had uncertain perpetrators given that many were kidnappings, an easy attack to identify potential attackers.

United Kingdom, targtype1=14

The IRA's uncertain data spread is nearly identical to its data spread in the certain dataset, only targeting unnamed civilians and specific religious targets. They used the same attacks and weapons in both datasets, and all the other data points contain the same statistically significant data. The UVF and Protestant Extremists have very interesting results in the uncertain data set. Both have significant purported numbers of attacks that are bombings, a type of attack that those organizations did not perform significant numbers of in the certain dataset. This is interesting, as it may indicate that these loyalist organizations did not want to take credit for bombings that they performed. Or it may indicate false flag attacks. More research into this would be required to learn what led to these attacks possessing uncertain perpetrators.

While the Protestant Extremists targeted the same sub targets, the UVF's purported attacks were directed against specific civilians and political rallies, something the UVF did not target in great numbers in the certain dataset. This, combined with the propensity for bombings, seems good evidence that these UVF attacks were not actually carried out by the UVF. All three loyalist organizations had much lower lethality in their purported attacks than in their certain and confirmed attacks, which is even more evidence to suggest that the Protestant Extremists and the UVF presumably did not commit many of these purported attacks.

The UFF had a nearly identical spread of data between the certain and uncertain datasets, with only the addition of some targeting of general civilians in addition to religious targets. All the organizations have the same *lethality*, *extended*, *natlty1*, and *suicide* values as in the certain dataset.

United Kingdom, targtype1=17

There are only two data points in this dataset, and there wasn't a significant number of attacks performed by the UVF against other terrorists in the certain dataset to make any comparisons.

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