

Does Violence Beget Violence?
A Quantitative Analysis of Terrorism and Counter-terrorism in Western Europe,
1950-2004

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Terrorism has become a major influence on the agendas of politicians, militaries, and researchers. Despite the present emphasis on Islamic extremism and the fallout from September 11, 2001, however, terrorism was a feature of politics throughout much of the 20th century. As a phenomenon, terrorism varies wildly from one case to another, and much research on terrorism since the 1970s has had the fundamental aim of explaining this variance (with an obvious eye towards helping governments reduce the instances of terrorism.)

Explanations for this variance abound in the literature, most of which focus on the characteristics of particular terrorist groups or differences in their motivations.¹ While these undeniably shape any campaign of terror, state counter-terrorism does so as well.² Some have suggested that aggressive, violent counter-terrorism practices on the part of states actually cause subsequent terrorist violence – in short, that violence begets violence.³ Like most scholarly work on terrorism, the ‘counterproductive’ argument is generally supported by reference to case studies. While such studies offer significant insight into specific terrorist campaigns, generalizing from them is challenging. Careful attention must be paid to case selection so as to avoid predetermining the outcome of any cross-case analysis;⁴ at the same time, however, the well-studied cases available to draw upon for such research may be so well-studied precisely because they are exceptional. It is thus important to determine whether this assertion is borne out by facts beyond the usual cases (particularly the Provisional IRA in Northern Ireland.) What of the corollary – that *less* violent, or non-violent, counter-terrorism practices reduce subsequent terrorist

violence? This research examines quantitative data on terrorist violence in Western Europe over the last fifty years in order to shed a different light on these questions.

Context

Though the published literature on terrorism has grown dramatically since the end of 2001,⁵ this new literature reflects many of the problems that have long plagued terrorism research. Chief among these is a shortage of empirical data: Silke's description of literature from 1995 to 1999 as existing "on a diet of fast-food research: quick, cheap, ready-to-hand and nutritionally dubious" is fairly representative of the field as a whole.⁶ What empirical research exists is often based on case studies of varying degrees of sophistication, generally relying heavily on secondary sources. Even the definition of terrorism has remained hotly contested despite several notable attempts to resolve the issue.⁷ As a phenomenon it is highly idiosyncratic; prominent scholar Walter Lacqueur has described it as "remarkably resistant to generalization".⁸

These weaknesses have not prevented the emergence of a large and sprawling literature on terrorism and, of greater relevance here, on counter-terrorism efforts by states. On the latter topic, Wilkinson articulates decades of British thinking by describing democratic states as having two fundamental options faced with terrorism, which are to respond to it either as a criminal justice matter or with military force.⁹ These roughly equate to policies of minimum force and maximum force, respectively, though in practice states tend to either alternate between the two (as has the United States, treating the 1995 Oklahoma City bombing and 1993 World Trade Centre bombing as criminal matters

while treating the 2001 incidents as a military matter) or employ elements of both simultaneously (as did Britain in Northern Ireland from 1969 to 1998.)¹⁰

Alongside many policy prescriptions for counter-terrorism, there is a growing body of work that argues some counter-terrorism actions to be ineffective or, worse, counterproductive. Such work, by authors such as Silke, Parker, Korte, Jackson, and others, advances a number of explanations for this fact.¹¹ These range from the simplistic (Silke posits, for example, a primal impulse towards vengeance)¹² to the axiomatic (Parker and Korte argue that violence de-legitimizes the state and increases popular support for terrorism – a claim that echoes the work of Brazilian left-wing extremist Carlos Marighella or the writings of Mao Tse-Tung.^{13,14} This version of what I term the counterproductive argument is based on the (not unreasonable) assumption that the goal of state counter-terrorism practices is to reduce the intensity of subsequent violence; instances where such practices increase the intensity of subsequent violence are thus counterproductive. Other, different versions of the counterproductive argument are based on a different presumed goal of counter-terrorism, that of reducing the societal fear inspired by terrorism itself – a measure by which many present policies, such as the US Department of Homeland Security's colour-coded threat indicator, have the exact opposite effect.¹⁵

Strengths and Weaknesses of Quantitative Approaches to Terrorism

The weakness of the scholarship that advances the counterproductive argument is its empirical foundation, and as a result this study aims to determine whether the perverse relationship between terrorism and counterterrorism that these studies describe remains

evident when a much broader range of terrorist activity is considered – one that is not as susceptible to subtle case selection bias. While statistical analysis of terrorism can obscure as much as it illuminates (by coding pipe bombs alongside trucks loaded with high explosive under ‘bombings’, for example, or reifying problems of definition),¹⁶ an attempt to examine a general proposition about terrorism such as this is well suited to the strengths of quantitative analysis.

Case studies of *terrorist groups*, some of which the field has tended to study extensively (the Irish Republican Army, Red Army Faction, various Palestinian movements, Hizballah, etc), may be a poor basis from which to make statements about *state actions* taken against those specific organizations or indeed against any terrorist group, particularly since states are rarely the unit of analysis in such work. Although unable to attain the same depth of interpretive understanding of specific cases, a large-scale cross-case quantitative study offers a better basis for making general statements about the relationship between terrorism and counter-terrorism as a whole. This has been something of a minority approach in terrorism research, but nonetheless has an established cannon in the form of work by Landes, Merari, Faria and particularly Enders and Sandler.¹⁷

This research uses Dr. Jan Oskar Engene’s Terrorism in Western Europe: Events Data (TWEED) data set to test the assertion that violent state actions contribute to increased terrorist violence.¹⁸ TWEED consists of some eleven thousand discrete terrorism-related events taking place in Europe between 1950 and 2004, each of which is coded for general

characteristics related to the involved actors and the nature of the event. The dataset was developed by coding news stories from an annual compendium of European political and economic journalism,¹⁹ and consequently it effectively represents the entire population of terrorist events in the time and space of interest. Inasmuch as generalizations about terrorism are possible, the instances of terrorism in Western Europe over a 55-year period seem a strong basis for such generalizations despite some weaknesses inherent in TWEED. These both arise from the dataset's reliance on historical journalistic sources, and are first, that covert action by governments will be mis- or unreported (as such actions generally do not become known until long after the fact, usually by dint of much research); and second, that the way in which terrorism events are reported may have changed over time. While Dr. Engene compensates for the changing usage of the term 'terrorism' by coding events that meet his definition regardless of whether they are so described in the source material, it is still possible that this might effect the longitudinal integrity of the dataset. Neither of these concerns are catastrophic, however, making TWEED an ideal dataset to use for this study.

Hypotheses

In formal terms there are two hypotheses under study, each with null and inverse possibilities:

1. Aggressive, violent counter-terrorism practices by a state lead to an increase in the intensity of subsequent terrorist violence against that state;
 - a. Alternately, that the inverse is true: Aggressive, violent counter-terrorism leads to a decrease in intensity of subsequent terrorist violence; or
 - b. The null hypothesis: That there is no correlation in either direction.

2. Less-aggressive, less-violent counter-terrorism practices by a state lead to a decrease in the intensity of subsequent terrorist violence against that state.
 - a. Alternately, that the inverse is true: Less-aggressive, less-violent counter-terrorism leads to an increase in the intensity of subsequent violence; or
 - b. The null hypothesis: That there is no correlation in either direction.

These hypotheses have been structured so as to capture the possibility that a state's tactical counter-terrorism practices, *regardless of their character*, have little impact on subsequent terrorist violence, or that some kinds of counter-terrorism practices are reduce the intensity of violence while others have no impact on the intensity of violence or are counter-productive (i.e. lead to an increase in intensity.) This is commonly assimilated to claims about effectiveness or ineffectiveness, which belies the conceptual complexity of what 'effectiveness' means in counter-terrorism terms.²⁰ No evaluations of the effectiveness of either type of tactics will be made here; my purpose is merely to determine the nature of any cross-case relationship between them and terrorist violence itself.

Concept Definition and Operationalization

Issues of definition are particularly contentious in research on terrorism, though in a sense the need to rely on an existing data set for this research forestalls much debate about the definition of terrorism. The TWEED dataset defines terrorism as "a form of violence that uses targets of violence in an indirect way in order to influence third-party audiences".²¹ This captures the most common elements of the phenomenon: Violence, influence or coercion, and a communicative or symbolic element.²² While TWEED does not explicitly limit the phenomenon to politically motivated violence, it is evident from

the coding manual that this limitation is implicit.²³ However, TWEED explicitly excludes ‘international’ terrorist incidents, focusing instead on terrorism that is internal to Western Europe (i.e. carried out by agents from the region, within the region, against states of that region). This is the reverse of the general tendency in the literature, where ‘international’ terrorism has been the privileged object of study.²⁴ The TWEED definition also allows for the possibility of terror by states, though it is unclear how this would be reflected in the coding itself.²⁵ This research, on the other hand, adopts the state-centric position of most terrorism research: That terrorism is predominantly a tool of non-state actors (at least in Western Europe), and thus that counter-terrorism is the domain of states.²⁶

Bringing the State Back In: Trends in Terrorism by Country

TWEED situates each of its eleven thousand events in one of eighteen Western European countries, which makes country-based analysis of counter-terrorism practices difficult. The vast majority of terrorism events in the time period covered by TWEED took place in only five of these countries, however: Great Britain, France, Spain, (west) Germany, and Italy.²⁷ The breakdown of events in these countries is given in table 1. This distribution of events simplifies the task of aggregating counter-terrorism practices and trends in the intensity of terrorist violence by time in the following discussion.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	United Kingdom	4533	40.3	43.9	43.9
	France	3362	29.9	32.5	76.4
	Spain	1143	10.2	11.1	87.5
	West Germany	519	4.6	5.0	92.5
	Italy	776	6.9	7.5	100.0

	Total	10333	91.9	100.0	
Missing	System	912	8.1		
Total		11245	100.0		

Table 1: Distribution of terrorism events by country

Developing the Independent Concept: Aggressiveness of Counter-terrorism Practice

The independent concept proposed by the hypotheses, namely that aggressive or less-aggressive state counter-terrorism practice, maps loosely onto Wilkinson's distinction between military measures and criminal justice responses, or between the principles of maximum versus minimum force. As this dichotomy implies, the concept actually entails two distinct categories: Aggressive counter-terrorist action and less-aggressive counter-terrorist action. This study uses tactical actions by state forces as a proxy for their general counter-terrorism policy as these are the most tangible and visible form of state action. We can reasonably infer policy decisions from tactical action on the basis that, in the majority of instances, a prior policy decision will have been made on the choice of institution to deploy (police or military, for example) or the operational procedures of that institution (such as a military force's rules of engagement). Other, less-tangible actions (such as legislative change, political initiatives, or diplomatic maneuvers) may well implement state's counter-terrorism policy, but the effects of such actions are less amenable to statistical analysis.²⁸ It is important to recall, however, that it is not expected that any given state will employ an aggressive or less-aggressive policy exclusively.

Instances of state action that are recorded in the TWEED database are sorted into 'aggressive' and 'less-aggressive' categories on the basis of two criteria: The nature of

forces acting, and the type of state action.²⁹ For the former criterion, involvement of military or intelligence services is taken as an indicator of an aggressive policy, whereas the involvement of police or courts indicates a less-aggressive policy. Courts are included as acting institutions because in some of the countries under study, judicial institutions play a very active role in counter-terrorism and thus cannot be ruled out as being logically subsequent to police action.³⁰ When the entire dataset is examined, as in table 2, we can see that no state action was recorded at all in approximately 83% of events. When the state did act, more often than not it was via the police or court systems (14% of overall events, but 88% of events where state action was recorded.) The military or intelligence services were employed very rarely (1.8% of overall events, and roughly 12% of state action.)

State Institutions					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No state action recorded	9360	83.2	83.8	83.8
	Police and courts	1614	14.4	14.4	98.2
	Military and secret services	202	1.8	1.8	100.0
	Total	11176	99.4	100.0	
Missing	System	69	.6		
Total		11245	100.0		

Table 2: State institutions acting in terrorism events

The second dimension of the independent concept, the type of state action, has been developed such that armed actions or exchanges of gunfire are considered ‘aggressive’ while arrests are generally considered less aggressive. In the case of arrests, events where

more than twelve people were detained have been classified as an ‘aggressive’ action rather than a ‘less-aggressive’ one. This is because TWEED codes the arrest of one or two individuals alongside the detention of hundreds (as in the internment operations in Northern Ireland in 1971), which is conceptually problematic as large-scale detentions are generally treated in the literature as aggressive state actions.³¹ Twelve is, admittedly, an arbitrary figure – one by which the actions of the Canadian authorities in detaining eighteen suspected terrorists in the summer of 2006 would be an ‘aggressive’ tactic. However, rather than use the Canadian state as the reference point for what constitutes ‘aggressive’ versus ‘less-aggressive’ counter-terrorism, and given the inability of the data to convey the character of any specific arrest, a dozen individuals seemed a reasonable threshold. This results in ninety-four events being recoded from ‘less-aggressive’ to ‘aggressive’.

Table 3 gives the breakdown of the type of state action in the overall dataset. Again, in roughly 83% of cases the state took no action, consistent with the logic of terrorism as a phenomenon: The initiative rests with small groups of people, operating in secret, who strike precisely where the state will be unable to respond immediately. In TWEED, only in cases where state forces are present at the moment of terrorist action (or initiated an event themselves, such as an arrest raid) will information about their reaction be coded. Three other types of state action captured by TWEED – conviction, demonstration control, and public statements – account for 7.2% of overall events, however, or 43% of the events where the state acted at all. At first glance this seems like a very large number of events to discount from this dimension of the independent concept! However, of this

set of excluded events, 87% of them – 703 in total – are convictions. This closely corresponds with the total number of arrests before this is corrected to compensate for large-scale detentions (736 events), which points to the logical relationship between the two. Before someone can be convicted, they must be arrested; consequently, to count both arrest and conviction as state action involves what is effectively a change in the legal status of a single individual. Because of this double-counting problem, and because convictions generally come some time after arrests, they are not considered tactical actions and are excluded from the analysis on that basis. This leaves 105 events (representing 0.9% of the overall dataset, or 13% of state action) in which either demonstration control or public statement was recorded. Neither of these types of action can reasonably be determined to be ‘aggressive’ or ‘less-aggressive’ as much depends on the specifics of each event – information that is not available through TWEED. Rather than attempt to reconstruct this context with external sources, these events are also excluded from the analysis.

Type of action by state institutions					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No state action recorded	9362	83.3	83.3	83.3
	Arrest	642	6.5	6.5	89.8
	Armed action or large-scale detention	433	3.0	3.0	92.8
	Other state action	808	7.2	7.2	100.0
	Total	11245	100.0	100.0	

Table 3: Type of action by state institutions

Table 3 also indicates that the ratio of ‘aggressive’ to ‘less-aggressive’ state action is

similar for this second dimension of the independent concept as for the first. As with table 2, there is no state action in the majority of events. In roughly 60% of the events still under consideration, state forces carried out arrests; in 40% of those same events was some form of armed action employed. Though still heavily tilted towards the ‘less-aggressive’, this is much less pronounced than the 88% to 12% for the type of state institution.

Since we are taking police action and arrests as two indicators of less-aggressive counter-terrorism tactics, and military action or armed action as two indicators of more-aggressive counter-terrorism, it would be helpful to compare all these indicators with each other as well as an indicator of aggressiveness such as the lethality of state action (in terms of the overall number of deaths and injuries in each event). Table 4 gives the Cramer’s V coefficients for the relationship between the type of action and the nature of the acting institution, respectively, with the number of events where there were state-caused deaths or injuries. The same coefficient is also given for the relationship between the type of action and the acting state institution.

Correlations Between Types of Counter-terrorism and State Lethality			
	Instances of State-caused casualties	Type of Action	Acting Institution
Type of Action	V=0.353	--	V=0.821
Acting institution	V=0.320	V=0.821	--

Table 4: Comparing dimensions of aggressiveness in counter-terrorism practice

These coefficients suggest that the type of action is closely related to the nature of the acting institution (Cramer's V of 0.821, remarkably high), and indeed this is unsurprising. In only six events across the entire dataset of eleven thousand did military units carry out arrests as defined above; in 191 events they engaged in armed action (and only in five were military units involved in other types of action, likely demonstration control.) Meanwhile, the type of action is a slightly better predictor of whether or not there will be state-caused death or injury ($V=0.353$) than is the acting institution ($V=0.320$). Both of these coefficients are quite high, however, which suggests that both type of action and nature of agent are good indicators of the aggressiveness of counter-terrorism practice. In short, police forces almost invariably engage in arrests, which are less likely to cause casualties; military units generally engage in armed actions that are more likely (and indeed, may be intended) to cause casualties.

Developing the Dependent Concept: Intensity of Terrorist Violence

Despite seeming obvious, the dependent concept of intensity of terrorist violence can be difficult to define as different measures can yield very different results. Korte, for example, cites two studies of the effects of the 1986 American bombing of Libya on international terrorism that reached opposite conclusions using two different metrics for intensity of violence.³² Intensity is most easily measured in terms of the rate of violence (such as the number of incidents per year), but this can be very misleading because of the extraordinary degree of variation between terrorist events. Another common indicator is the trend in lethality of terrorist events, in terms of total deaths and injuries per year. A third dimension of intensity is the overall duration of a particular terrorist campaign. Unfortunately, although this would mirror the qualitative focus on terrorist groups rather

than state counter-terrorism efforts, the data in TWEED is not sufficiently robust to allow investigation of the duration of specific campaigns by particular groups. Although in principle every event is attributed to a discrete terrorist group, in practice many are coded for generic groups (e.g. “unknown UK group”, which accounts for 22% of events in the UK) – likely because of a lack of detail in the source material for the dataset. In fact, in many events the acting group is not identified at all – in some 59% of events in the UK, for example. Consequently, this research is limited to examining the rate and lethality dimensions of intensity of violence.

Measuring these two dimensions of the dependent concept is relatively straightforward. I developed a measure of rate by taking events initiated by terrorist groups (rather than by state institutions) and breaking them down by year and by country. For the sake of analytical simplicity, only the top five countries previously identified were used.

Lethality, meanwhile, was calculated by taking the total number of deaths and injuries caused by terrorist groups, subtracting the number of deaths and injuries of group members themselves (so as to screen out ‘own goals’), and then adding this figure to create annual totals for each of the five countries under analysis. Figures 1 and 2 summarize the resulting trends in both dimensions for these five countries.

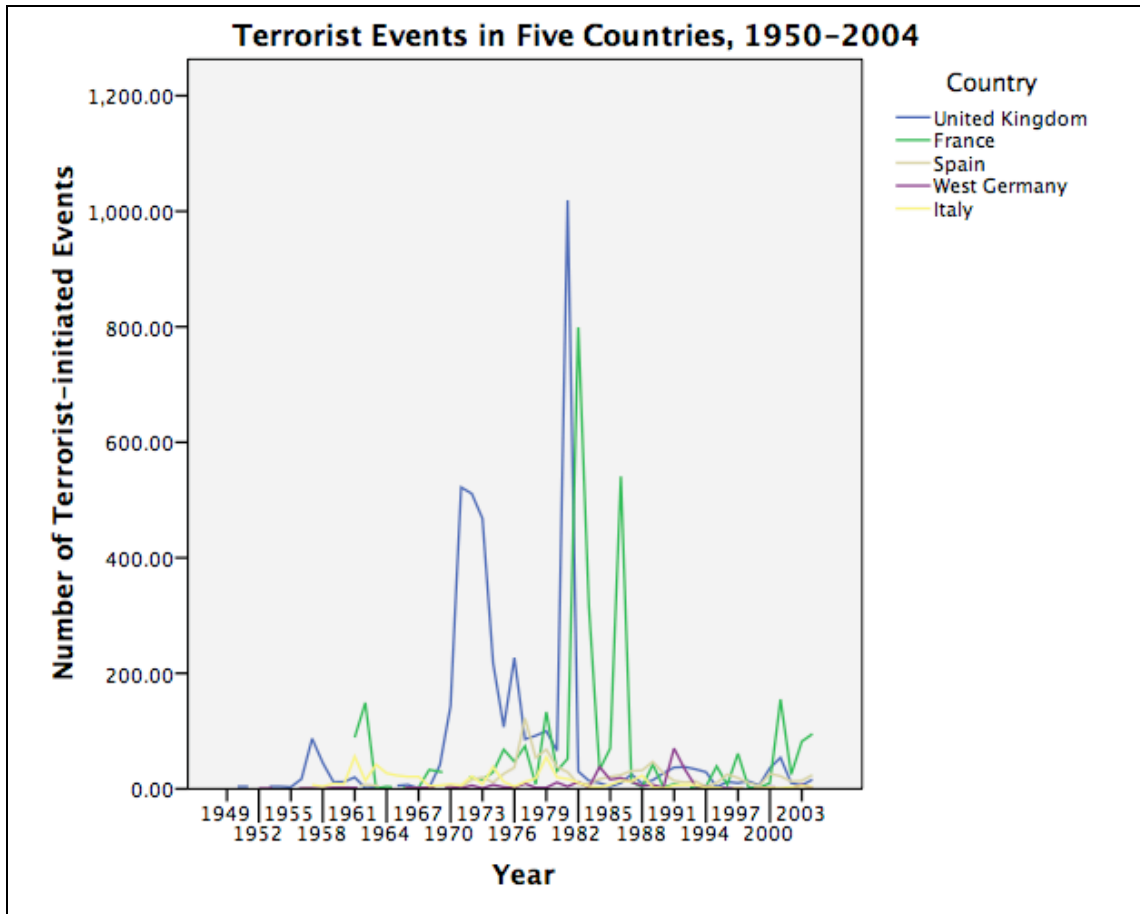


Figure 1: Number of terrorist events by year, by country

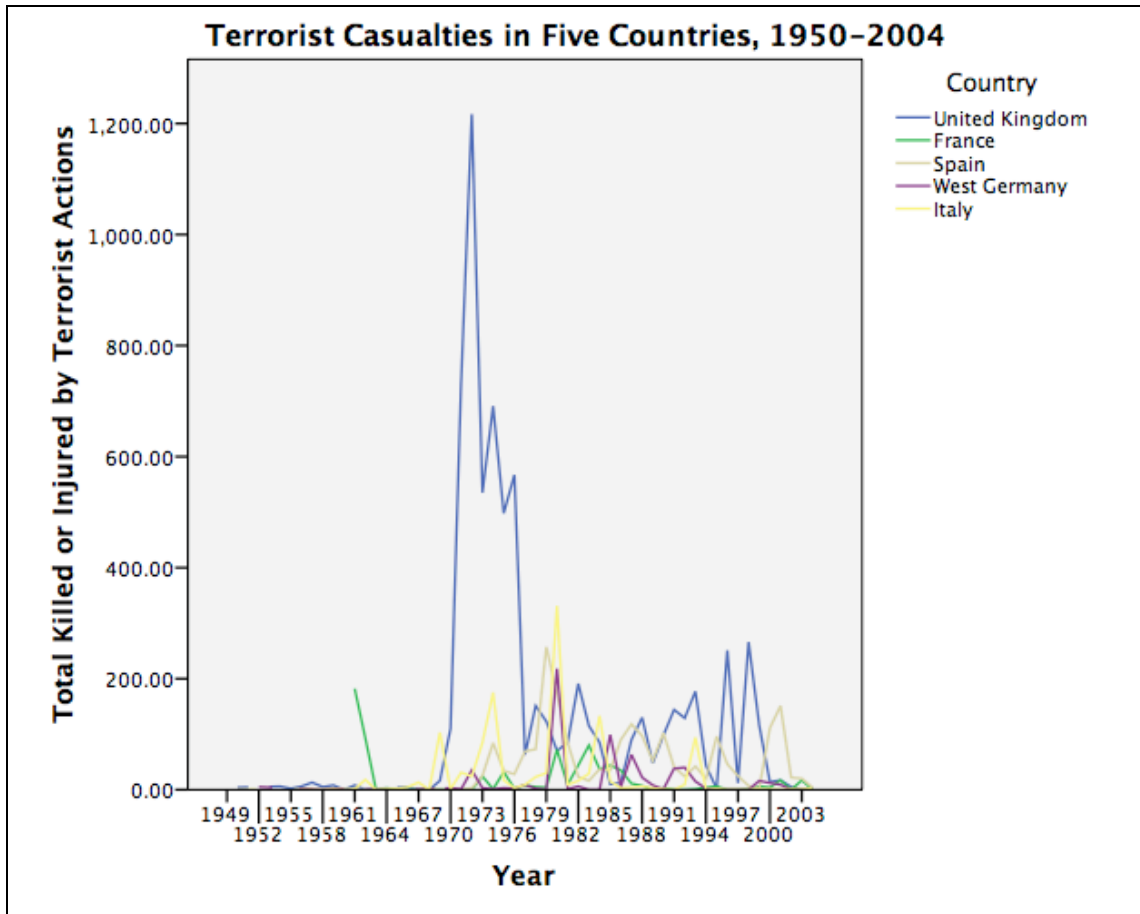


Figure 2: Total terrorist-caused casualties by year, by country.

As can immediately be seen from both figures, the intensity of terrorist violence varies greatly over time and in space. Different countries experience radically different levels of violence from one another, and also from one year to the next. It is precisely this variation (generally in time but also from one country to another) that much terrorism research seeks to explain, including those studies previously discussed which assert that state action is the chief determinant of the character of subsequent terrorist violence. One important observation, however, is that the two dimensions of intensity examined here do not necessarily co-vary. Despite what one might logically expect, i.e. that more acts of terrorism will cause more death and injury, we can see by simple inspection that this is

far from the case. Years that were marked by very large numbers of terrorist events may have had far fewer casualties than other years, or vice versa. This is a counterintuitive finding, but in light of existing literature on terrorism, an unsurprising one. One of the defining characteristics of terrorism is that it is often very symbolic and was particularly so latter 20th century Western Europe; Brian Jenkins' oft-quoted observation that "Terrorists want a lot of people watching, not a lot of people dead" describes much of the terrorism of that era well.³³ As the data for the UK in the early 1970s shows, however, this is far from a hard-and-fast rule – and hence the necessity of considering both dimensions of intensity when examining the effects of counter-terrorism practice.

***Prima Facie* Observations: Actions and Outcomes in Five Countries**

Overall the data in TWEED reflect the state of scholarly knowledge about terrorism as a phenomenon. The United Kingdom, France, Spain, West Germany and Italy have experienced terrorist campaigns of varying intensity; their responses have also been varied. From a tactical perspective, the initiative lies with terrorists rather than the state; far more often than not, terrorist violence meets no immediate response from governments. Indeed, it is characteristic of terrorist violence that it is carried out against lightly protected targets at times and places chosen specifically to prevent the state from bringing its far greater capacity for violence to bear. When the coercive capacity of the state was employed, military action against terrorism (at least within the state) or armed exchange with terrorist groups took place relatively infrequently compared to police action or arrests. There is thus significant variation in both the independent and dependent concepts under study, variation that warrants analysis.

Having limited the analysis to five countries (while still including over 90% of the dataset), it becomes fairly straightforward to examine aggregate variations between each country. This is somewhat akin to taking a 55-year long snapshot of each country, and is not that dissimilar from the brief case studies frequently introduced in evaluations of counter-terrorism practice.³⁴ Comparing the independent and dependent variables across the five countries under study here is thus instructive because it should suggest similar conclusions, i.e. that violent counter-terrorism practices lead to increases in the intensity of terrorist violence.

Table 5 compares the independent and dependent concepts in terms of percentages. For the independent metrics related to state action, these percentages are derived from the total number of events where actions carried out by that country's state institutions.

These figures show the relative proportion of police versus military responses and arrests versus armed actions within the total number of state actions, rather than the total number of events in that country. This is to better highlight the ratio of aggressive to less-aggressive action, since in the vast majority of events there was no state action at all. The dependent metrics (related to the intensity of violence), meanwhile, give the percentage of terrorist-initiated events and terrorist-caused death or injury out of the entire dataset. This has the effect of showing the proportion of the total number of terrorist events and terrorist-caused casualties in the whole of Western Europe over the 55-year timeframe that each of these five countries experienced.

	UK	France	Spain	W. Germany	Italy
<i>Action Type</i>					
% Arrests	28.11	87.84	54.95	78.49	68.81
% Armed action	71.90	12.16	45.05	21.50	31.19
<i>State Agent</i>					
% Police	57.80	99.70	99.40	100.00	100.00
% Military	42.20	0.30	0.60	0.00	0.00
<i>Intensity of Violence</i>					
% of overall terrorism	47.06	33.62	9.56	3.32	6.44
% of terror-caused casualties	55.72	6.09	16.32	5.05	9.76

Table 5: Counter-terrorism practices and terrorist violence in five countries

At first glance, these figures suggest a spectrum of state aggressiveness. France is the least aggressive in its counter-terrorism policies, while the United Kingdom is the most aggressive (carrying out armed actions in 12.16% and 71.90% of events when convictions and other actions are excluded, respectively.) The other three countries are situated somewhere between these two extremes, with varying degrees of armed action employed. The UK is almost alone in employing the military in a domestic counter-terrorism role. While the UK experienced a disproportionate amount of terrorism (47.06% of all events), however, the other countries under examination also experienced varying levels of terrorist violence. Focusing exclusively on the nature of the acting state institution would leave much of this variation unexplained, whereas the type of state action is seemingly an important explanatory factor – a conclusion further corroborated by the higher correlation between action type and state-caused casualties than between state institution and such casualties, as previously discussed.

The intensity of terrorist violence varies greatly across these five countries, generally but not perfectly following the trend in aggressiveness of state action. France, despite being the least aggressive of the five, still experienced some 33% of total terrorist-initiated events in the entire dataset (compared to highly-aggressive Spain, with only 9.56% of overall terrorist events.) A similar problem arises when terrorist lethality is considered: France, despite having hardly ever employed military force and almost never engaging in armed actions, still has a marginally higher percentage of the total terrorist-caused deaths and injuries than did more-aggressive West Germany. If we were to ignore the French case, however, there would be a very strong relationship between aggressive state action and increased intensity of terrorist violence – a relationship reinforced by the use of the military, at least in the one case of the United Kingdom.

In fact, ignoring France is precisely what has happened in the (largely qualitative) body of terrorism research. Case studies tend to focus on the Irish Republican Army (in the UK), the Red Army Faction (in West Germany), the Red Brigades (in Italy), and the Basque national liberation movement ETA (in Spain). Comparatively little is written about the French experience of terrorism. This is not terribly surprising, because there is no one single terrorist group responsible for the bulk of violence in the country, but rather a multitude of small groups pursuing a bewildering array of goals. Meanwhile, that certain terrorist groups (particularly the IRA) in particular have been the subject of voluminous research may actually indicate that they are exceptional rather than typical. Noted terrorism scholar David Rapoport once estimated that 90% of terrorist movements become defunct in their first year; of the 10% that remain, only half survive to the end of

their first decade.³⁵ Making generalizations about terrorism as a phenomenon based on this exceptional five percent of groups that persist long enough to be studied in depth is of course problematic, but so too is trying to make case studies of short-lived or marginally effective terrorist groups. Terrorism in France is relatively under-studied particularly in the English-language literature, though there are a few scholars (such as Michael Dartnell, who has written the standard volume on *Action Directe*) who have attempted to tackle the subject.³⁶

This is not to say that the entire argument that counter-terrorism is counterproductive is merely an artefact of poor case selection, or that it is indicative of poor scholarship on the part of the authors who advance the claim. Many of the works cited here as examples of this argument have perfectly valid cases, with appropriate variation in outcome. In any event, even when the French case is considered, there is still clearly some sort of relationship between aggressive counter-terrorism and intensifying terrorist violence. Unpacking the nature of that relationship beyond simple patterns in aggregate data is the central challenge of this study, one where quantitative analysis offers many advantages.

Building Sequence into the Model: Chronology and Causality

One of the most obvious shortcomings of the aggregate ‘snapshot’ approach demonstrated above is that though it suggests some correlation, this does not imply any causal relationship. Even if we accept that counter-terrorism and terrorism are causally related to one another (which, intuitively, is not difficult), there is a persistent problem of endogeneity because the inverse of the hypothesized relationship cannot be logically

ruled out.³⁷ Did terrorism intensify in the UK because the state was aggressive, for example, or was the state unusually aggressive in response to unusually intense terrorism? It is precisely because of this problem that I have not attempted to measure the simple correlations between overall proportion of aggressive or non-aggressive state action and intensity of terrorism above. Such statistics would not relate to the fundamental question of this study, which is whether the assertion that counter-terrorism *causes* more intense terrorism is borne out by a broader set of facts than a case study-based approach permits.

There is much debate over causality in social science, of course, but it is hardly disputed that statistical correlations by themselves do not establish causal relationships. The logic of causality must be built into the model beforehand, usually in the form of chronological sequence. Establishing that *A* is consistently followed by *B* constitutes a causal explanation only for the strictest Humean empiricist, but for most purposes it is an acceptably strong indicator of causality. In order to examine the posited relationship between aggressive counter-terrorism practice and terrorist violence, I have structured my analysis specifically to look for a sequential relationship between independent and dependent variables. This has been accomplished through a four-step analysis.

First, I have aggregated the data for the independent and dependent variables by country and year. Rather than looking for correlations between the independent and dependent metrics in individual events in the dataset, this approach creates annual totals of the number of events having the characteristics specified by each metric. The starting point

for the analysis thus becomes, for example, the total number of events in each year where police forces were the acting state institution, or the total number of terrorist-initiated events in each year. Six such totals (for arrests, armed actions, police actions, military actions, number of terrorist-initiated events, and the total number of terrorist-caused deaths and injuries) were developed for each year of the dataset, based on the events that took place in the five countries under study. In other words, for each of the six metrics, there are a total of 275 data points (55 years by five countries). These data points in turn represent almost 92% of all terrorism-related events coded in TWEED.

Second, based on these annual totals, I have developed a measure of change from year to year for each variable. What is analyzed is not the annual total itself, but rather the change in total from one year to another. This change is expressed in absolute terms, calculated by subtracting the total number of events (or persons killed/injured) in one year from the same total for the previous year. The result is an integer with no logical upper or lower limits; a positive number denotes an increase in the total over the previous year while a negative number indicates a decrease. These integers – reflecting the *change* in annual number of events or casualties, rather than the annual figures themselves – become the indicators of the independent and dependent variables and are examined for correlations.

Third, I have arranged this data so as to build in a chronological sequence between independent and dependent variables. The change in independent variable is compared to a subsequent change in the dependent variable as follows: For the year T , the change in

independent variable from $T-2$ to $T-1$ is compared to the change in the dependent variable from $T-1$ to T . For example, this compares the change in the number of instances of aggressive state action in one year to the change in the intensity of terrorist violence in the *subsequent* year. The use of years as the time period in the model is another arbitrary analytical decision, because in principle any timeframe (days, weeks, or multi-year periods) could have been used. Acts of terrorism may be almost spontaneous, or may be the result of months of planning and organization. They may be a response to immediate circumstances and carefully crafted for political effect, or may be quite divorced from the headlines of the day and the specific political agenda of the movement.³⁸ A periodicity of one year in the analysis seemed a best-fit compromise given the highly variable timing of terrorist action.

This is the most crucial element of the analysis, because by building in this sequence I have explicitly structured the inquiry to investigate the effects of counter-terrorism on later terrorism. This does not entirely eliminate the endogeneity problem: Changes in counter-terrorism practice from year to year are simply unexamined. These could logically be influenced by patterns of terrorism in preceding years, and indeed this would be consistent with the view that terrorist and counter-terrorist violence shape one another.³⁹ Put another way, the argument runs that those states that were highly aggressive towards terrorist groups (such as the UK) were so because they were faced with particularly violent terrorism (such as that of the IRA). This may well be true, but is neither here nor there for the purposes of this analysis: Regardless of why a state chose a particular policy, my analytic approach isolates the specific causal sequence implied by

the ‘counterproductive’ argument – namely, the effects of that policy on subsequent terrorist violence. If an increase in aggressive counter-terrorism action is consistently followed by an increase in the intensity of subsequent terrorist violence, it would seem that there is some credence to the ‘counterproductive’ argument regardless of *why* the increase in aggressive state action came about.

Having developed data that capture the annual change in the variables being examined and built chronological sequence into the model, meaningful statistical comparisons can now be made as the fourth and final step of analysis. Because all six variables are comprised of similarly discrete intervals, single linear regression analysis was carried out on eight relationships (between four independent variables representing two dimensions of state aggression, and two dependent variables representing two dimensions of intensity of terrorist violence.) Table 6 below summarizes the results of these eight regressions.

	r^2	Significance	Regression coefficient	Standard Error	Coeff. / SE ratio
<i>Type of Action</i>					
Effect of arrests on subsequent rate of terrorism	0.028	0.006	-5.459	1.979	2.758
Effect of arrests on subsequent lethality of terrorism	0.000	0.944	-0.112	1.586	0.071
Effect of armed action on subsequent rate of terrorism	0.008	0.146	1.125	0.773	1.455
Effect of armed action on subsequent lethality of terrorism	0.067	0.000	-2.607	0.592	4.404
<i>State Agent</i>					
Effect of police action on subsequent rate of terrorism	0.018	0.027	-3.216	1.447	2.222
Effect of police action on	0.001	0.643	-0.536	1.153	0.465

subsequent lethality of terrorism					
Effect of military action on subsequent rate of terrorism	0.008	0.136	1.168	0.782	1.493
Effect of military action on subsequent lethality of terrorism	0.066	0.000	-2.610	0.599	4.357

Table 6: Regression analysis results

These results suggest a more complex relationship than what was apparent when examining the dataset as a whole. Two features of these results are immediately apparent and require some explanation before I turn to interpreting them in light of my hypotheses. First, because TWEED is theoretically an exhaustive description of the entire population of internal terrorism events within its time and space dimensions, a lower confidence interval would be acceptable than can be relied on for analysis based on a sample of a larger population. Despite this fact, however, the significance scores for the effect of arrests and police actions on the subsequent lethality of terrorism are far too high (0.911 and 0.643, which indicate confidence intervals of 8.9% and 35.7%, respectively) to accept the relationship they imply. In any case, this relationship seems to be effectively nonexistent (based on the r^2 values of 0.000 and 0.001, and the fact that the standard error of the regression exceeds the regression coefficient itself.) The scores for the relationships between arrest and lethality of terrorism, and police action and lethality of terrorism, must thus be discarded – leaving six sets of results to be explained.

The second feature of the results that requires explanation concerns the relationship between armed action as well as military force and the subsequent rate of terrorism.

Generally speaking, if the ratio of the regression coefficient (which describes the slope of the best-fit line calculated by the regression procedure) to the standard error (which describes the average distance of data points from that best-fit line) is less than 2, there is a good chance that the nature of the observed relationship is unstable and would change dramatically if even a small number of data points changed or were discarded. A coefficient-to-standard error ratio of roughly 1.5 makes the relationships between armed action and rate of terrorism, and military force and rate of terrorism somewhat suspect in this light. However, when data for one country (Italy) were arbitrarily removed from the analysis, the results of the same regressions are almost unchanged. Since Italy engaged in armed action relatively infrequently and practically never employed military force, it is not surprising that removing it from the analysis does not affect these relationships. By so doing, however, I have removed 20% of the data points from the analysis – and yet the figures for these two relationships remain stable. Based on this verification, we can treat the figures for these relationships as meaningful despite the low coefficient-to-standard error ratio.

Interpreting the remaining six results is far from straightforward, even once these two issues are dealt with. The regression coefficients give a sense of the direction of the relationship in each case, though reading too much into their actual values must be avoided. Based on these figures, we can make three general statements:

1. Arrests and police actions are both associated with a substantial decrease in the subsequent rate of terrorist violence.
2. Armed action and military action are both associated with a mild increase in the

- subsequent rate of terrorist violence.
3. Armed action and military action are both associated with a strong decrease in the subsequent lethality of terrorist violence.

Each of these three statements must be taken with caution, however, because of the very low r^2 value of the relationships behind them. Whereas the regression coefficient describes the nature of a correlation, r^2 is a measure of its strength. Put another way, r^2 describes how much of the change in the dependent variable can be accounted for by change in the independent variable. With this in mind, the extremely low r^2 values in table 6 suggest that, regardless of their direction and extent, the relationships behind these three statements are quite weak.

Implications

Data, like facts, do not speak for themselves, and these data are no exception. The combination of regression coefficients, standard errors, and r^2 values suggest a two-pronged interpretation of the results of this analysis. First, it would seem that the argument that aggressive counter-terrorism practice leads to an increase in the intensity of terrorist violence is partially correct. In terms of the specific hypotheses of this study, the first (that aggressive counter-terrorism practice increases the intensity of subsequent violence) is borne out in terms of the rate of violence but is falsified on the basis of lethality: Aggressive action, or the use of military force, tends to increase the rate of violence but *decrease* the number of people killed or injured by such violence. Only the

null hypothesis, that there is no relationship between aggressive action and intensity of violence, can be conclusively discarded.

Regarding the second hypothesis, that less-aggressive counter-terrorism practices reduce the intensity of subsequent terrorist violence, the results are similarly ambiguous. Arrests and police actions reduce the rate of subsequent terrorism, consistent with expectations. However, these same indicators of counter-terrorism practice have no meaningful relationship with the lethality of terrorism. At best, then, we can discard the inverse of the second hypothesis (that less-aggressive counter-terrorism practice *increases* the intensity of violence), but cannot rule out the null hypothesis.

The second implication of these results, however, is that though it is partially borne out by facts the claim that aggressive counter-terrorism practices *cause* more intense terrorist violence is greatly overstated. This is potentially the more interesting finding of this study, and is based on the exceedingly low r^2 scores for the observed relationships. Many versions of the 'counterproductive' argument imply that state action is highly (if not exclusively) determinate of subsequent terrorist violence. In addition to running counter to one of the few areas of consensus in the literature on terrorism (namely, that there are a multitude of poorly-understood and idiosyncratic factors that influence the character of terrorist violence), this claim is flatly contradicted by these results. The direction of the effect of state action on later terrorism is relatively clear (if strangely contradictory); however, it is also clear from the low r^2 values that state action is *at best* a contributing factor to the pattern of subsequent violence.

Conclusions

Statistics describe, but do not explain. Although this research has, I hope, demonstrated a useful application of quantitative methods to terrorism research and tested a common argument against a broad set of empirical facts, it can only point towards possible explanations for its somewhat ambiguous findings. Regarding the correlation between military deployments and the lethality of subsequent terrorism, for example, it is possible that this is simply an effect of idiosyncratic behaviour on the part of the IRA. Recall that the UK is the only state of the five under analysis to employ the military for domestic counter-terrorism; consequently, the entire observed relationship might be attributable to the IRA's preference for attacking military targets (even when these were better protected, resulting in attacks that produced fewer casualties on average). The same cannot be said for armed actions in general, however, which are similarly associated with a decrease in the lethality of subsequent terrorism and an increase in its rate.

A potentially more useful line of investigation is suggested by the second finding of this study, however, regarding the extent to which tactical state action is determinate of subsequent terrorist violence. It is possible that state action of any kind actually has very little bearing on the character of terrorist violence, or at least its most observable characteristics – a finding with significant policy implications. It is equally possible that other, non-tactical forms of state action have stronger correlations with subsequent trends in terrorist violence, a possibility that could be investigated by introducing additional explanatory variables (such as measures of economic performance or political

participation.) In either case, this test of assertions that counter-terrorism is counterproductive shows that counter-terrorism, like terrorism itself, is “remarkably resistant to generalization.”⁴⁰

Notes

¹ Bruce Hoffman, "'Holy Terror': The Implications of Terrorism Motivated by a Religious Imperative," *Studies in Conflict and Terrorism* 18, no. 4 (1995), Gregory D. Miller, "Confronting Terrorisms: Group Motivation and Successful State Policies," *Terrorism and Political Violence* 19, no. 3 (2007), Walter Laqueur, *The Age of Terrorism* (New York: Little, Brown, 1987).

² H. D. Munroe, "Adaptation or Termination: Terrorism, Counter-Terrorism and Change over Time" (St Andrews University, 2007).; João Faria, "Terrorist Innovations and Anti-Terrorist Policies," *Terrorism and Political Violence* 18, no. 1 (2006).

³ Raven Nicole Korte, "Is Counter Terrorism Counterproductive? The Case of Northern Ireland" (University of Maryland, 2005), Tom Parker, "Fighting an Antaeus Enemy: How Democratic States Unintentionally Sustain the Terrorist Movements They Oppose," *Terrorism and Political Violence* 19, no. 2 (2007), Andrew Silke, "Fire of Iolus: The Role of State Countermeasures in Causing Terrorism and What Needs to Be Done," in *Root Causes of Terrorism: Myths, Reality and Ways Forward*, ed. Bjørge Tore (London: Routledge, 2005).

⁴ Gary King, Robert O. Keohane, and Sidney Verba, *Designing Social Inquiry: Scientific Inference in Qualitative Research* (Princeton, New Jersey: Princeton University Press, 1994).

⁵ Cynthia Lum, Leslie W. Kennedy, and Alison Sherley, "Are Counter-Terrorism Strategies Effective? The Results of the Campbell Systematic Review on Counter-Terrorism Evaluation Research," *Journal of Experimental Criminology* 4, no. 2 (2006).

⁶ Andrew Silke, "The Devil You Know: Continuing Problems with Research on Terrorism," in *Research on Terrorism: Trends, Achievements and Failures*, ed. Andrew Silke (London: Frank Cass, 2004).

⁷ Alex P. Schmid and Albert J. Jongman, *Political Terrorism: A New Guide to Actors, Authors, Concepts, Databases, Theories, and Literature* (New Brunswick, NJ: Transaction Books, 1988).

⁸ Walter Laqueur, *A History of Terrorism* (London: Transaction, 2001).

⁹ Paul Wilkinson, *Terrorism Versus Democracy: The Liberal State Response*, 2nd ed. (London: Routledge, 2006).; see also Richard Clutterbuck, *Guerrillas and Terrorists*

(London: Faber and Faber Ltd, 1977); and Richard L. Clutterbuck, *Terrorism and Guerrilla Warfare : Forecasts and Remedies* (London: Routledge, 1990).

¹⁰ Tony Geraghty, *The Irish War: The Hidden Conflict between the IRA and British Intelligence* (Baltimore and London: The Johns Hopkins University Press, 2000), John Mueller, *Overblown: How Politicians and the Terrorism Industry Inflate National Security Threats, and Why We Believe Them* (New York: Free Press, 2006).

¹¹ Geraghty, *The Irish War*, Richard Jackson, "Security, Democracy, and the Rhetoric of Counter-Terrorism," *Democracy and Security* 1, no. 2 (2005), Korte, "Is Counter Terrorism Counterproductive? The Case of Northern Ireland", Mueller, *Overblown: How Politicians and the Terrorism Industry Inflate National Security Threats, and Why We Believe Them*, Parker, "Fighting an Antaeon Enemy: How Democratic States Unintentionally Sustain the Terrorist Movements They Oppose.", Silke, "Fire of Iolaus: The Role of State Countermeasures in Causing Terrorism and What Needs to Be Done."

¹² Silke, "Fire of Iolaus: The Role of State Countermeasures in Causing Terrorism and What Needs to Be Done."

¹³ Parker, "Fighting an Antaeon Enemy: How Democratic States Unintentionally Sustain the Terrorist Movements They Oppose.", Korte, "Is Counter Terrorism Counterproductive? The Case of Northern Ireland".

¹⁴ Carlos Marighella, *Minimanual of the Urban Guerrilla* (Havana: Tricontinental, 1970), Mao Tse-Tung, *On Guerrilla Warfare*, trans. Samuel B. Griffith (II) (Baltimore: The Nautical & Aviation Publishing Company of America, 1992).

¹⁵ Mueller, *Overblown: How Politicians and the Terrorism Industry Inflate National Security Threats, and Why We Believe Them*, Jessica Wolfendale, "Terrorism, Security, and the Threat of Counterterrorism," *Studies in Conflict and Terrorism* 29, no. 7 (2006).

¹⁶ For general discussion on this point, see Wilkinson, *Terrorism Versus Democracy*. One example of the definitional challenges was the Memorial Institute for the Prevention of Terrorism (MIPT)'s Terrorism Knowledge Base, which included such acts as attacks by Hizballah on uniformed Israeli soldiers on patrol in occupied Lebanon as 'terrorism'. See www.mipt.org.

¹⁷ Walter Enders and Todd Sandler, "The Effectiveness of Antiterrorism Policies: A Vector-Autoregression-Intervention Analysis," *American Political Science Review* 87, no. 4 (1993), Walter Enders, Todd Sandler, and Jon Cauley, "Un Conventions, Technology and Retaliation in the Fight against Terrorism: An Econometric Evaluation," *Terrorism and Political Violence* 2, no. 1 (1990), Faria, "Terrorist Innovations and Anti-Terrorist Policies.", W. M. Landes, "An Economic Study of U.S. Aircraft Hijackings, 1961-1976," *Journal of Law and Economics* 21 (1978), Todd Sandler and Walter Enders, "Applying Analytical Methods to Study Terrorism," *International Studies Perspectives* 8, no. 3 (2007).

¹⁸ Jan Oskar Engene, "Five Decades of Terrorism in Europe: The Tweed Dataset," *Journal of Peace Research* 44, no. 1 (2007).; see also <http://www.uib.no/people/sspje/tweed.htm> (accessed 8 Feb, 2008)

¹⁹ Ibid.

²⁰ This is in fact the subject of another, concurrent paper by the author.

²¹ Engene, "Five Decades of Terrorism in Europe."

²² Clutterbuck, *Guerrillas and Terrorists*, Martha Crenshaw, *Terrorism, Legitimacy, and Power : The Consequences of Political Violence : Essays* (Middletown, Conn.: Wesleyan University Press, 1983), Bruce Hoffman, *Inside Terrorism: Revised and Expanded Edition* (New York: Columbia University Press, 2006), Walter Laqueur, *Terrorism* (London: Weidenfeld & Nicolson, 1978), Laqueur, *A History of Terrorism*, Charles Tilly, "Terror, Terrorism, Terrorists," *Sociological Theory* 22, no. 1 (2004), Wilkinson, *Terrorism Versus Democracy*, Joseba Zulaika and William A. Douglass, *Terror and Taboo: The Follies, Fables, and Faces of Terrorism* (New York: Routledge, 1996).

²³ Jan Oskar Engene, "Tweed Code Book" (University of Bergen, 2006).

²⁴ Crelinsten, Ronald D., "The Discourse and Practice of Counter-Terrorism in Liberal Democracies", *Australian Journal of Politics and History*, 44 no. 1 pp. 389-413, cited in Engene, "Five Decades of Terrorism in Europe."

²⁵ ———, "Tweed Code Book".

²⁶ See for example the definition employed in recent RAND studies of terrorism Brian A. Jackson et al., "Aptitude for Destruction," (Santa Monica: 2007), ———, "Breaching the Fortress Wall: Understanding Terrorist Efforts to Overcome Defensive Technologies," (Santa Monica: RAND Corporation, 2007). The inherent legitimation of state violence by this approach to terrorism is itself the subject of an emerging debate; see Ruth Blakeley, "Bringing the State Back in to Terrorism Studies," *European Political Science* 6, no. 3 (2007).

²⁷ TWEED is silent on how the continuity between West Germany and the unified Germany is handled in the dataset, but this would not seem to have a significant impact on this particular study as relatively few events would be affected.

²⁸ Contra some work by Enders and Sandler, who treat all forms of state action (in this case, UN Security Council resolutions) as equally amenable to statistical modeling. See Enders, Sandler, and Cauley, "Un Conventions, Technology and Retaliation in the Fight against Terrorism: An Econometric Evaluation."

²⁹ For the full description of the dataset's variables, see Engene, "Tweed Code Book".

³⁰ Michel Wieviorka, "France Faced with Terrorism," *Studies in Conflict and Terrorism* 14, no. 3 (1991).

³¹ Korte, "Is Counter Terrorism Counterproductive? The Case of Northern Ireland", Parker, "Fighting an Antaeon Enemy: How Democratic States Unintentionally Sustain the Terrorist Movements They Oppose."

³² Korte, "Is Counter Terrorism Counterproductive? The Case of Northern Ireland".

³³ Cited in Hoffman, "'Holy Terror': The Implications of Terrorism Motivated by a Religious Imperative."

³⁴ Parker, "Fighting an Antaeon Enemy: How Democratic States Unintentionally Sustain the Terrorist Movements They Oppose.", Miller, "Confronting Terrorisms: Group Motivation and Successful State Policies.", Yonah Alexander, ed., *Counterterrorism Strategies: Successes and Failures of Six Nations* (Washington, D.C.: Potomac Books, Inc, 2006), Silke, "Fire of Iolaus: The Role of State Countermeasures in Causing Terrorism and What Needs to Be Done."

³⁵ Cited in Hoffman, *Inside Terrorism*.

³⁶ Michael Dartnell, "France's *Action Directe*: Terrorists in Search of a Revolution," *Terrorism and Political Violence* 2, no. 4 (1990), Michael Y. Dartnell, *Action Directe: Ultra-Left Terrorism in France, 1979-1987* (London: Frank Cass & Co., 1995), Gilbert Guillaume, "France and the Fight against Terrorism," *Terrorism and Political Violence* 4, no. 4 (1992), Jeremy Shapiro and Bénédicte Suzan, "The French Experience of Counter-Terrorism," *Survival* 45, no. 1 (2003), Wieviorka, "France Faced with Terrorism."

³⁷ Sidney Verba et al., "Race, Ethnicity and Political Resources: Participation in the United States," *British Journal of Political Science* 23, no. 4 (1993).

³⁸ Two illustrative examples are the kidnapping of Pierre Laporte by the *Front de Libération du Québec* in 1970, which was almost entirely a spur of the moment undertaking, and the IRA's series of large car bomb attacks on London in the early 1990s – each of which required months of preparation. See Louis Fournier, *Flq: Histoire D'une Mouvement Clandestin* (Outremont: Lantôt Éditeur, 1998), Geraghty, *The Irish War*, William Tetley, *The October Crisis, 1970: An Insider's View* (Montreal & Kingston: McGill-Queen's University Press, 2007).

³⁹ Faria, "Terrorist Innovations and Anti-Terrorist Policies.", Munroe, "Adaptation or Termination", John Horgan, *The Psychology of Terrorism* (London: Routledge, 2005).

⁴⁰ Laqueur, *A History of Terrorism*.

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