An Overview of Geographical Perspectives and Approaches in Terrorism Research

by Karim Bahgat and Richard M. Medina

Abstract

Geographical perspectives and approaches are implemented in some areas of conflict research, but can benefit many more. While the body of geographically-oriented terrorism literature has been growing since the 2001, a geo-spatial focus has traditionally been absent from most research on terrorism research and remains largely unfamiliar to many terrorism researchers. This article explores geographical literature on terrorism and its contributions to the understanding of terrorism as an empirical phenomenon. The article suggests three particular contributions from geographical perspectives:

1) the geography of terrorism is linked to specific places and contexts throughout the world where governance failures lead to grievance and opportunity;

2) the terrorist attack cycle occurs along specific spatial trajectories that can be identified and possibly policed; and

3) terrorist attacks have significant negative impacts but are spatially limited and not as severe as presumed by much of the conventional literature.

These aspects vary, depending on whether the violence is waged by territorial or non-territorial groups. Included in the article is a list of data sources that may serve as a partial guide for future geographic research.

Introduction

The formal study of terrorism originated decades ago and was based on the belief that there is an urgent need to understand and counter this form of political violence. Research was then confined to only a handful of scholars and its set ways of approaching the topic were limited and leading to surprisingly few insights.[1] The attacks against America on September 11th, 2001 greatly expanded this community of terrorism scholars and motivated efforts for new and innovative research approaches from many disciplines, heralding in what some have called a “second wave of terrorism research.”[2] Among these recent publications there are also those that explore terrorism through the lens of geography. There is a considerable body of such geographically-oriented terrorism literature spanning a wide variety of sub-literatures and research agendas that yet remains to be fully recognized.
The purpose of this article is to investigate various geographical approaches, answering such questions as: How and why did geographical research on terrorism come about? What are some of the general topics that have been explored in the literature, and have geographical perspectives contributed any unique empirical insights to these topics? Terrorism here is defined as violence perpetrated by sub-state actors against non-combatants for political gain. It is recognized that violent groups engage in a wide variety of tactics. A group is labeled a terrorist organization when they begin to employ terrorist tactics.

After first describing and explaining the growth of the geographical terrorism literature, the article goes on to conceptualize terrorism perpetrated by both territorial groups in politically unstable countries and non-territorial groups in more stable countries. Such a broad conceptualization enables the unification of a divided terrorism literature and highlights the importance of being critical to, and carefully delimiting, one’s use of terrorism-related data. The article then explores the geographical literature for insights on how terrorism in these two contexts may differ from each other in relation to the spatiality of a) their locations, b) group dynamics, and c) consequences. It is hoped that by exploring these geographical aspects, this article will also help spread awareness of the geographical literature and its contributions, and thus show the usefulness of utilizing geographical perspectives in the study of terrorism.

A Primer on Geography and the Geographical Approach to Terrorism

Geography is a science at the convergence of many disciplines. Almost every research discipline can be approached from a geographic perspective. A few examples are geopolitics, economic geography, and spatial epidemiology. Geography is split into two main study areas – physical and human geographies. In the context of terrorism research much of the effort originates with human geographers, though recent concerns for terrorist motivations involve physical, or at least a combination of physical and human geographies. For example, many are concerned with changing climates, redistribution of resources, and the potential for terrorism in the near future; though these research topics presently make up only a small proportion of the whole of geographic studies of terrorism. The large majority are from the human geography half. Human geography focuses on a greater understanding of theoretical constructs of space and place, the people, things, and events within and at them, social systems, and connectivities between entities and events. This, in simple terms, is human geography, though it is not all of it.

Approaching a socio-political problem, such as terrorism, through a geographic lens leads to a greater understanding of not only locations of terrorists and their activities, but spatial processes, social network connections, social systemic operations, and changes in space and time. Social, political, and other systems, as well as their agents, operate in specific geographical contexts, whereby they are researched in socio-spatial or geopolitical realms. Influences of place and location on activities become quite clear in these types of research. For instance, traditional
statistical analysis attempts to identify cause-effect relationships but assumes that these hold true across space and time. Considerations of geographic and temporal context allow these relationships to vary. A variable may have a strong effect on another variable in one corner of the world, but this effect might be non-existent elsewhere. Geo-statistical tools have been developed to identify this context-dependent spatial variation in cause-effect relationships.

Geographical perspectives on terrorism do not attempt to rival or substitute other theoretical explanations; they are simply a means by which theories can be tested. For instance, T.R. Gurr’s “relative deprivation” theory can be thought of as being more salient with proximity to relatively wealthier populations, which can in turn be tested with spatial analysis to support the initial theory. It is therefore crucial that geographic perspectives be considered. The locations of terrorists, and the groups they identify with, have specific narratives behind their motivations, which are related to cultures, ethnicities, and historical situations of the terrorists and their constituencies. Their choices and strategies may be based on spatial considerations, or attacks may be the result of geographic context. Even the impacts of terrorist attacks may be highly dependent on the geographic context in which these occur. Understanding these geographical aspects has the potential to provide advance knowledge of future operations, supportive populations, and strengths/weaknesses in the terrorist system.

Terrorism Studies Turn Geographic

The use of geographical perspectives in terrorism research is a relatively recent trend. A lack of cross-disciplinary entrepreneurship among the original terrorism scholars may be one of the reasons for this late arrival of geographical terrorism research. There is little evidence that its earliest scholars were interested in bringing geographical perspectives to their studies. With the exception of a few works in the 1980s that attempted to theorize and observe geographical aspects of terrorism, most terrorism researchers have traditionally tended to utilize historical case studies, descriptive statistics, or time-series analysis. The first to systematically examine geographical aspects of terrorism were scholars from the discipline of geography. Professionally trained academic geographers have contributed to many topics and branches of the social sciences, though in the past they were rarely interested in the topic of terrorism. This changed with the attacks against America on September 11th, 2001, which ignited nationalist feelings in the US, increased the popularity of terrorism research, and motivated new research funding that would eventually attract greater attention and efforts from geographers.

Initially the geographic terrorism literature was driven mostly by applied geographers, who were motivated by the perceived benefits that their Geographic Information Systems (GIS) expertise could provide to homeland security. A few sub-literatures of this policy-oriented approach include the works of vulnerability scientists who attempt to predict the spatial distribution of future terrorism risks and vulnerabilities; crime and defense analysts who focus on various
forms of geographic profiling to locate and apprehend those who engage in terrorism;[11] and
technical practitioners showing how spatial models and GIS can be useful for the immediate
prevention, evacuation, and rescue efforts in the case of a terrorist attack,[12] as well as in the
physical recovery efforts for modeling and predicting the worst affected areas and returning
targeted environments to living/working order.[13]

While there are many geographers concerned with applied research, in recent decades there has
been a substantial growth of geographers that instead engage in philosophical and theoretical
critiques of the status quo [14]. It is natural that these geographers would also contribute to a
more critical and skeptical research response to counter-terrorism [15]. This view resulted in a
variety of engagements. It was particularly popular in the early 2000s to use critical geographic
perspectives to debate moral issues and deficiencies with governments’ approaches to counter-
terrorism.[16] This resulted in a vast geographic literature on how government security measures
are altering the quality of life in cities and putting residents “under siege”[17] by enacting
policies that “shrink” the lives of the broader population either publically by physically modifying
the architecture of public spaces and infrastructure[18] or privately by extending the spatial
extent of governmental privacy-transgressing surveillance practices.[19] Other topics included
acknowledging the state’s role in causing or exacerbating terrorism;[20] showing how we use
spatial metaphors to envisage terrorism in our popular discourse, and how these are often left
unexplored, tied to existing negative stereotypes of world regions, and driven by political and
ideological motivations;[21] and scholars of international law warning of the legal difficulties
involved in apprehending terrorists across national borders.[22] More detailed reviews of such
critical literatures can be found elsewhere.[23]

Today, these combined waves of geographical research have resulted in a relatively large body of
literature at the intersection of terrorism studies and geography; a significant number of doctorate
dissertations written on the topic;[24] and even a sizeable selection of geography courses
developed on issues of terrorism at various Universities.[25] It is particularly important to
explore the geographical contributions, since aside from a few exceptions,[26] most appear to
have gone unnoticed by the broader community of terrorism researchers. Even among the
geographical literature’s contributing authors there is little mention of the broader geographical
turn beyond what is relevant for their specific topical interest. Much geographic research has
been focused on offering solutions or critiques to how governments react to terrorism, but there
is also a growing body of quantitative and data-driven investigations on terrorist actors and their
tactics that should be recognized.

Quantitative Geography and Terrorism Studies

Quantitative geography methods were implemented relatively late in the study of terrorism. This
may have to do with the timing of prevailing academic currents. In the 1960s, improved
computer technology facilitated the implementation of quantitative and positivist research in geography and inspired the use of spatial modeling throughout various academic fields.[27] By the time terrorism studies began to solidify as a research field in the 1970s,[28] geography’s positivist tendencies were being met with widespread criticisms by behavioral, humanist, and other scholars reacting to, and highly critical of, the earlier positivist and quantitative approaches.[29] Being a relatively young research field, terrorism researchers seemed more concerned with agreeing on a basic conceptual framework than with embarking on geographical inquiry. By the time terrorism studies were conceptually mature and prepared for geographical considerations in the 1980s and 90s the period of quantitative geography had very much passed, and geography as a field had become dominated by postmodern topics.[30] It was not until the early 2000s that terrorism scholars began to adopt geographical perspectives, precisely when improved GIS technology was making geography popular again and terrorism studies seemed mature enough to welcome such approaches, though surely the events of 9/11 played a major role.[31] As geographical perspectives became more common among terrorism researchers, there was less focus on debating counterterrorism policies, and more on empirically describing and explaining terrorist violence or terrorist actors. Figure 1 illustrates this shift in research focus; it shows that while geographers have been responsible for the overwhelming majority of publications in the critical and applied literatures, non-geographers have been the main contributors to the empirically based literature.[32] It is mostly this empirical literature that can contribute to the growth in quality of studies on terrorist violence.

Figure 1. A comparison of the number of journal articles published by geographers and non-geographers in geographical research on terrorism. Source: Authors.
Crucial to much of the empirical research on terrorism’s geographical aspects is the availability of spatially explicit data on terrorism. Unfortunately, most terrorist event databases have not recorded precise geographical coordinates. This limits the spatial accuracy of traditional research to national or regional level aggregations. Since the great promise of geographical research hinges on exploring the finer details of sub-national variation, many geographically minded researchers have sought alternative but difficult to access data sources such as police records,[33] or made adjustments to existing databases. It is not the case however, that data at the micro-level are always more appropriate than data at broader scales. Rather, the choice of which scale to use - sub-administrative provinces, equally dispersed grid cells, cities and towns, and even specific street addresses - depends on the specific purpose of the research project.[34] Some have warned about the so-called “local trap”[35] of narrowing one’s focus to only proximate and local factors, thus ignoring important causal factors that can only be seen from broader scales.[36] This article nevertheless maintains its call for more micro-data because most terrorism research has been precisely the opposite, focused on broad national scales.

Due to the difficulties involved and efforts required in geo-referencing data, i.e. assigning locational information, most subnational studies mentioned in this article have been limited to case studies on specific countries or cities. Most instances where large global-level comparative studies have been conducted on geo-referenced terrorism data have required the technical finesse of adept computer scientists, which has meant less focus on actual knowledge production.[37] To aid future research with obtaining geo-referenced terrorism data for their projects, the authors of this article attempted to take stock of the available terrorism data sources and their potential for geo-referencing (26 in total) and have provided a listing of these in Appendix I. For each dataset, note is made on their geographical extent, time coverage, and possibility for geo-referencing if not already available. Currently no freely available terrorism dataset can be geo-referenced to the level of street-addresses, but one dataset is available with prepackaged city-level coordinates attached to each terrorist event. This is the Worldwide Incidents Tracking System (WITS), which also happens to be one of the more extensive and popular datasets. However, the WITS dataset is presently offline, with no indication of whether and when it may be available again. The most widely used dataset, the Global Terrorism Database (GTD), was initially intended for geo-referencing to enable the detection of country and point level distributions and spatially patterned modes of attack,[38] but such spatial information has only recently been included in the online dataset version, and is currently only included for a small subset of the data. The GTD and many other datasets nevertheless contain information about the city name of each event, and these city-names may in turn be geo-referenced with the locational coordinates found online in many freely available city gazetteers, such as GeoNames.[39] Note that even if successfully geo-referenced, all of these data sources are still prone to errors that must be addressed: many use overly broad inclusion criteria and may not represent a clean sample of terrorist-only events. Most are based on open-source newspaper material and therefore exhibit journalistic biases of both under- and
over-reporting on different aspects.[40] Beyond the freely available datasets, there also exists potential in some of the more restricted datasets that emphasise the spatial and GIS compatible nature of their data, such as *Jane’s Terrorism Events Spatial Layer,* and the *Violent Extremism Knowledge Base* (VKB). While the list of datasets provided with this article is not comprehensive, the authors have attempted to include many of the geographically based terrorism attack datasets available in the open source. To further remedy the overall lack of awareness and marginal status of geographical perspectives and data the article now turns to exploring some of its contributions with the help of an organizational framework.

**Terrorism and Territoriality: A Tactic Used in Many Settings**

A useful way to make sense of geographical perspectives and contributions in the study of terrorism is to focus on the multiple settings in which it is used. Doing so sheds light on terrorism’s territoriality, conceived here as the desire and achievement for ownership of territory by terrorist actors vis-a-vis the state. It is argued that such an approach has the advantage of potentially bridging a divided research engagement throughout the broader terrorism literature. This division is two-fold: one school of thought states that terrorism is a problem faced primarily by stable democracies and is therefore, as Alex P. Schmid has argued, the “peacetime equivalent of war crimes,”[41] while another school of thought considers terrorism to be the widespread targeting of civilians during internal conflict and civil war. Investigating the territorial links of these two conceptualizations will be the main focus of this section and should help in moving past the conceptual disagreements of what is and should be studied in terrorism research.

Perhaps the most obvious link to territoriality is that terrorism has territorial intentions: if terrorism is political, and policies are typically written for specific use within territories, then it follows that terrorism can be seen as at least partially in terms of a desire to achieve control of territory, geography, and the contested people within political or social boundaries.[42] Indeed, many types of political violence have such desires for territorial control. Some scholars adopting geographical perspectives have therefore suggested that what defines and differentiates terrorism’s territorial desires is more precisely its failure to fulfill them and that this happens mostly in strong and stable countries. This idea constitutes the first view of terrorism and coincides with many common observations made about terrorism. It was first explicitly stated by A. Merari in 1993 and was later popularized by I. Sánchez-Cuenca and L. de la Calle in 2009.[43] The argument is that terrorism occurs when violent groups do not own or control territory, which tends to be the case when the state is strong and successfully prevents oppositional groups from gaining control over territory. This forces the opposing parties to act within the government’s territory and control, causing them to plan and execute their attacks in a secretive manner using light weapons that are not easily detectable, like explosive devices, under which circumstances we tend to describe what happened as terrorism.[44] In such cases terrorists tend
to attack civilians in order to influence or induce the government to enact certain policy changes.

[45] This view explains why many scholars have consistently found that most terrorism occurs in democratic societies [46]. This is in line with how scholars originally conceived of terrorism, namely as a form of clandestine anti-state revolutionary violence that was affecting some democracies in Western Europe in the 1970s.[47] Overall, these propositions are supported by various quantitative studies where terrorism is found to be statistically correlated with government strength [48] whereas the onset of civil war (usually dominated by guerrilla warfare tactics) is correlated with government weakness.[49] I. Sánchez-Cuenca and L. de la Calle have created a dataset on rebellious groups and included a variable for whether or not each group controlled territory. Across several quantitative studies they consistently found that non-territorial groups were more likely to engage in clandestine and indiscriminate terrorist tactics.

[50]

The second view on terrorism’s territoriality is one which views terrorism as related to conflict-ridden, weak, and failed states and regions,[51] - a linkage that is also found in some quantitative studies.[52] With the government’s failure to control all of its territory, many authors therefore conceive of terrorism as connected to those that are strong enough to liberate or “acquire space”[53] and aim for partial autonomy or secession. It is noted that doing so creates new spaces of self-governance, provides security of sorts, and allows groups to use them as recruiting and training grounds.[54] In stark opposition to how the first perspective sees terrorism as non-territorial, this view focuses on terrorism as territoriality grounded and connected to land-ownership. Many of these countries and separatist areas are characterized by civil war, weak government control and territory-owning groups. Frequently used examples or case studies of such terrorism are the Basque Country, Northern Ireland,[55] Sri Lanka, Colombia, Indonesia, the Philippines, Afghanistan, Pakistan, Iraq, and Israel/Palestine.

These two perspectives on terrorism appear to contradict each other; however, a closer investigation shows that what is assumed to be unique in one perspective is actually a shared characteristic of both. Both views can be counted as valid approaches to the study of terrorism, each focusing on a specific type that takes place in a unique territorial context. Proponents of the first view have questioned how the second view links state weakness and conflict with terrorism: after all, clandestine and indiscriminate terrorist attacks are not necessarily taking place in areas where the government is absent and where one can enjoy full territorial control. Some analysts note that weak states should foster territorially bounded guerrillas with a preference for military type attacks rather than terrorism.[56] Yet, on closer inspection it has been noted that when the targets of guerrilla groups are far from home in areas they do not own, control, or have a major presence in, their tactics indeed tend to be indiscriminate and terrorist-like; i.e. that guerrillas sometimes also engage in terrorism.[57] Additionally, having bases in such weak states or areas has been statistically associated as increasing the likelihood of engaging in both domestic and transnational terrorism.[58] Just as civil wars are consistently and statistically associated with
large, mountainous, and tropical areas—features believed to limit the state’s ability to control territory - some geographical research has found that such factors can also facilitate terrorism. [59] However, the finding that rugged terrain facilitates terrorism may apply mostly to politically weak countries affected by conflict and less so in other settings. Geographical research focusing on a mixed analysis of both stable and unstable countries, or only on the targets of transnational terrorism found no such evidence linking terrorism to rugged terrain.[60]

The main claim of the second perspective is that terrorists have a tendency for seeking out areas where the government is weak. This appears to contradict how the first perspective sees terrorists as located in areas characterized by government strength, stability, peace, and inability to permanently control any territory. Yet, there is usually a drive to escape towards the weaker peripheries of government control. Faced with a strong government, non-territorial terrorist organizations take on nomadic lifestyles and often seek to escape towards “old, smaller industrial cities or working class suburbs that lie in the shadow of” bigger central cities; in neighborhoods that provide protection and anonymity through “places where people can get lost;”[61] in slums;[62] and sometimes in geographically remote areas such as sparsely populated jungles, mountains, islands, or deserts.[63] What makes them different from territorial based terrorists is that to the extent that they are able to escape the reach of government control they only achieve partial autonomy and may still be dependent on favorable “socio-geographies” of sympathetic populations to provide hiding or at least to accept their presence.[64]

The lesson from these geographical and related studies is that it is not sufficient to focus on solely weak and conflict-ridden states, or on strong and stable states, in order to study terrorism. Terrorism can be said to come in two varieties: territorial terrorism is present when the perpetrating group controls territory and non-territorial when it does not. This helps explain why, contrary to the view that terrorism is a weapon of the weak, an expanding literature has been investigating the use of civilian targeting by relatively stronger groups in civil wars and views such violence to be intersecting with the concept of terrorism.[65] M.G. Findley and J.K. Young brought a geographical perspective to this literature and found that roughly half of all terrorist acts indeed occur during and inside civil war-affected zones[66]. By implication, their study shows how the other half of acts of terrorism occurs in stable areas with strong governance.

Despite the different contexts, both territorial and non-territorial based terrorism is characterized by the same type of clandestine attack tactics and choice of light weaponry that is commonly associated with terrorism.[67] It matters both what kind of violence it is and who uses it.[68] This recognition of two types of terrorism and their different yet similar territorialities may have many important implications for judging and defining the empirical limits of terrorism studies so as to possibly unite the divided views of literature contributors.

**The Geography of Terrorism**
A particularly common theme in the geographic literature has been to map, analyze, and explain the locations and spatial distributions of terrorism across the earth’s surface. Where does it occur and why? In the conventional terrorism literature, these aspects are only assumed or claimed without empirical support, or barely explored with simplistic country maps or summary statistics for world regions. Therefore, considerable disagreement abounds as to what exactly its geography is. Following the attacks of September 11th the main focus has been on transnational terrorism,[69] which in popular discourse is conceived of as a global threat with instant reach—a threat too ominous and complex to identify on a map. In this view, the transnational terrorist threat is perceived to be completely “de-territorialised,” potentially present anywhere, and structured in networks whose reach is unlimited.[70] Donald Black presented a theoretical argument for how the globalisation of communication, transportation, and weapon technology in the late 20th has not only extended the reach of violence but has also enabled socially different populations in distant locations to be viewed as the cause of local grievances and therefore the targets of terrorist violence.[71] Heralded by the unexpected and complex spatiality of the September 11th attacks,[72] it has been suggested that traditional nationalist/separatist terrorism campaigns have “tangible” geographies and stand in contrast to the present wave of religious transnational terrorism where “no such geographic clarity” exists.[73]

Other scholars have been more optimistic about identifying the geography of transnational terrorism and often locate it along lines, intersections, fault lines, or front lines where social differences and oppositional elements meet and are the most proximate and easily accessible for targeting. Authors of several studies have argued and found that transnational terrorism is most intense on the semi-periphery of the global economic core states, i.e. at the intersection between rich and poor countries where proximity and relative economic deprivation is most pronounced. [74] De Blij invoked such an argument when he mapped patterns of transnational terrorism in Africa and argued that they followed the front lines where Christian and Muslim zones met.[75] Neumeyer and Plümber found weak statistical support for the argument that attacks across the Islam-West divide motivate others to engage in similar attacks, but not that they necessarily followed any particular front lines.[76] Others have suggested more specific places and regions where transnational terrorism has been more common. During the 1990s, a commonly held belief in Western imaginations was that the regions of Southwest Asia and Middle East were the main terrorist hotspots of the world.[77] Yet, empirical studies have shown that terrorism in the 1990s was more evenly distributed across the world’s regions, and that only in the post-9/11 era did the Middle East and South Asia become the leading regions in the world afflicted by transnational terrorism.[78] Blomberg and Hess showed that while country-maps of absolute incidents may suggest most transnational terrorism to be occurring in rich and democratic countries in the Americas and Europe, focusing instead on frequency of incidents relative to total population changes the map considerably towards highlighting the Middle East and authoritarian countries as particular hotspots for transnational terrorism.[79] Goldman similarly suggests that
transnational terrorism is a local phenomenon, and has been increasingly so since the 1990s, using many different proxies for the geographical spread of terrorism. He argues that Al-Qaeda’s “global tendencies should not be perceived as an indicator of the globalization of terror attacks.”[80] All of these findings point to the often local and consistent[81] geographical shapes of a seemingly chaotic transnational terrorism phenomenon.

Despite the common preoccupation with the complexity and the fault lines of transnational terrorism, there is reason to believe that the defining geography of terrorism is rather to be located in the hotspots and regions of domestic terrorism. Not only does domestic terrorism far outnumber the transnational variant, D. Kilcullen has suggested that transnational terrorism is only an amalgamation of unrelated attacks orchestrated by domestic terrorist groups that cooperate with transnational groups only as far as it benefits their own local goals.[82] If we limit our view of terrorism to these local and domestic variants, we may begin to more precisely visualize and identify its locations and spaces. Unfortunately, very little geographical research has been done to substantiate these locational aspects of domestic terrorism, or to compare them with those of transnational terrorism. As a brief exercise, the authors of this article georeferenced the GTD terrorism dataset to demonstrate that these aspects of terrorism can indeed be visualized and compared. The time frame was set from September 11th 2001 to the end of 2011 (31,591 events). In order to distinguish between domestic and transnational terrorism, the authors coded the country-origin of the nationality of each known perpetrating group in the dataset. Where the group country origin differed from the attacked country, the event was coded as being transnational, otherwise it was set to domestic. The many events where the group perpetrator was unknown (with 18,573 events more than half) were excluded. City statistics and summary variables were then calculated to represent each city for the time-period examined. This city-level terrorism dataset was then georeferenced using the National Geospatial-Intelligence Agency’s Geonet Names Server (http://earth-info.nga.mil/gns/html/index.html).

Roughly 50 percent of all the cities in the domestic data, and 40 percent of the transnational data were excluded in the analysis, as there were no matching locations in the GeoNames database. Note that the final maps included in this article visualize the locations of terrorism as defined in the GTD data only; the data were accepted at face value without any data delimitation and may therefore include some dubious cases of terrorism such as attacks on military forces. There are many possible errors in the resultant maps, including those arising from the coding-process and creation of the group-nationality dataset, as well as a variety of possible geo-referencing errors. It is nevertheless maintained that such crude estimations were necessary due to time-constraints and since the purposes of the resulting maps were mostly for illustrating the feasibility and potential of geo-referencing rather than rigorous analysis.

The outcome of the exercise can be seen in Figure 2 and suggests innovative approaches to visualizing transnational terrorism’s fluid nature. Tentatively, the maps support the notion that the targets of transnational terrorism overlap to a large extent with those of domestic terrorism,
rather than occupying distinct geographies as expected by some. While transnational terrorism differs somewhat in terms of its origins and far-reaching travel-lines, many of these cases appear to be limited to regional country-neighborhoods. Note that the former shows average people killed (since transnational events are believed to be more focused on high media visibility), while the latter shows the total count of incidents. Terrorism appears to be originating in specific areas throughout the world, in both developing and developed countries, and in weak and strong states. Regional hotspots include (parts of) South and Central Asia, the Middle East and Caucasus, Europe, Central Africa, northwestern South America, and Southeast Asia.
Figure 2. A comparison of (a) the origins, flows, and targets of transnational terrorism, $n=1,158$ events across 497 origin-target trajectories, with (b) the locations of domestic terrorism, $n=10,369$ events across 7,427 place-names, data source: Global Terrorism Database.
Identifying the geography of terrorism in more specific terms than this is beyond the scope of this article. Rather, it seems more useful to explore the reasons why such spatial patterns appear in the first place: to enable the investigation of what it is about those places that drives people to resort to terrorism.[83] Domestic terrorism may result from some of the same root causes that drive other violent strife. However, given that terrorism has been found to be a largely ineffective tactic for achieving political demands,[84] it would appear unlikely that it is used for self-aggrandizement. What makes terrorism unique from other violent tactics is that it may be driven solely or mostly by grievances. Mustafa argued that the spatial patterns of government injustice may become engraved onto certain territories, shaping opinions and discourses of injustice, which we may in turn “map…on to the geography of terrorism.”[85] In this way, landscapes of government injustice, repression, and neglect are believed to fuel popular support, sympathy, motivation, and increased likelihood of terrorist attacks.[86] Even in resource-rich provinces, the geography of government corruption is argued to lead to underdevelopment and grievances that in turn give rise to terrorism’s geography.[87] Though some conventional studies have found terrorism to be unrelated to economic conditions,[88] studies that have spatially disaggregated economic activity to the level of separatist regions,[89] provinces,[90] and minority group territories[91] do find economic characteristics to be important indicators of grievances based on economic inequalities and discrimination that may lead to reactions in the form of terrorism. The focus on grievances is supported by how A.B. S. Bravo and C.M.M. Dias found exactly such a dominance of grievance-related causes in their quantitative study on terrorism across two Eurasian regions.[92] Attention to government policies may therefore be one way to illuminate and model terrorist grievances.

While territorially based terrorists may draw their grievances from poor local conditions and discrimination against the rural areas where they originated, the type of grievances that cause terrorism when actors do not control territory may be unique to the world’s urban areas. Scholars focusing on this urban aspect of terrorism argue that cities’ increasingly dense and built-up infrastructure makes it difficult to stage large-scale rebellions or control territory in urban environments and thus forces any violent disagreement to take the form of clandestine terrorism.[93] They find that such violent disagreement is a particularly pertinent feature of newly and rapidly developing cities since they attract people of many different cultures and backgrounds into close vicinity without always being able to provide the necessary support systems, resulting in grievances between competing social groups that become manifest in demands and struggles against state authorities.[94] Whereas grievances may be the primary cause of non-territorial terrorism, economic and greed-related motives may play a slightly larger role in cases of territorial terrorism. In such settings, characterized by groups operating in conflict settings, terrorism appears sometimes to be used strategically to ensure security, autonomy, and compliance within the territories, resources, and activities they control in order to ensure financial resources, power, and the survival of their organization and purpose.[95] For instance,
in Afghanistan illicit drug production has been found to finance and motivate the resort to terrorist attacks on civilians at the provincial level as an attempt to silence any political opposition.[96]

In this section, attention has been given to how a sizeable literature attempts to identify and describe the geographical layout of terrorist attacks, and how their findings suggest increased focus on domestic terrorism by charting the predominantly local and shrinking geography of terrorism in the world, and thus, countering popular perceptions and fears of transnational terrorism. Other parts of the literatures have attempted to explain the geography of terrorism, i.e. what causes its locations and how it does so. Their geographical approaches have utilised spatial disaggregation and attention to sub-national correlations, and this section showed how they helped identify context-specific causes that are characteristic of non-territorial and territorial terrorism. This has been beneficial over conventional research methods since the local-level presence of causes and outcome of terrorism must somehow connect and link together spatially for causal arguments and theories of terrorism’s root causes to be more accurately verified.

**How Terrorist Groups Function and Operate**

Other geographical research focuses more on those who engage in terrorism. Acts of terrorism can be performed by “lone wolfs” or orchestrated by network-like structures in the case of non-territorial terrorism, and by centralized land-based organizations in countries where terrorists are able to control a territorial homeland. Whereas conventional terrorism literature on terrorist organizations, members, and activities has focused mostly on sociological and psychological inquiries, the geographical terrorism literature has uncovered additional details on the micro-dynamics and internal workings of how organizations plan and conduct terrorist attacks that have been previously unknown in the literature. Concerted terrorist attacks usually follow and presuppose networks of contact and interaction between willing perpetrators that have been driven together by their environment, context, and own choices. Understanding the development of these relations and network structures in such a manner as to give rise to terrorist attacks thus becomes a crucial mode of inquiry. Network analysis entails studying connections, structures, interactions, and flows among and between entities. It is common in many disciplines and fields. Terrorist network studies from a strictly sociological perspective are common,[97] but relatively few researchers place the network in a geographical context, even though social activity and geographic location are often interdependent. New approaches to terrorism research are being developed that focuses on social networks of non-territorial terrorists rendered to geographic space. I. C. Moon and K.M. Carley created a visualized social network on a representative global map and a simulation model of geographical aspects of social networks including interaction, proximity and relocation.[98] R.M. Medina and G.F. Hepner published a study that for the first time studied terrorism through the “socio-spatial network” framework describing networks that
operate in a conceptual hybrid space where multiple spaces are considered in operations and activities.[99] They found a relationship between geographic proximity and social closeness for terrorists within the Islamist global network, which is a crucial finding where some question the importance of geography in today’s information age.[100]

Assuming that a group of individuals know each other through the previously mentioned networks, how do they go about planning and preparing for an attack? This was one of the questions asked by B.L. Smith et al. who investigated the known patterns of preparatory activities among captured domestic terrorist perpetrators within the U.S.[101] Their report found that most of them had lived and engaged in the majority of their preparatory activities within a 30 mile radius from their intended target. Limited spatio-temporal analysis suggested a pattern of surveillance close to the target early in the planning phase, after which the rest of the preparatory behavior would move far away from the target, only to move gradually closer again as the attack date approached. These findings highlight the importance of having bases of operation. Proximity to such safe havens is considered to increase the risk of future attacks, as first suggested by R.V. Clarke and G. R. Newman in 2006.[102] D.K. Rossmo and K. Harries used detailed police data reports and found that in Turkey, terrorists acting on behalf of rural guerrillas tended to establish cells within 4 miles of each other and the closest one only half a mile from the targeted area.[103] They propose a specific geographical model that can be used by intelligence offices to predict future attacks or nearby cells. Very similar spatial relationships were found by C. Berrebi and D. Lakdawalla for terrorist cells in Israel.[104] These findings highlight the local nature of planning and execution of terrorist attacks.

Perhaps the most popular topic for spatial analysis in the group dynamics literature has been to investigate the spatial logics of terrorist attack strategies and how they evolve over time. The focus on attack strategy refers to the choices and intentions of terrorist groups, not the contextual factors and root causes that motivated these actors in the first place (see section titled “The Geography of Terrorism”). In the conventional literature, terrorist attacks are often thought to target an enemy group or sub-category thereof but as being otherwise randomly executed and “unpredictable.”[105] Contrary to such a notion, the geographical literature has shown that terrorist attacks are carried out according to certain spatial logics. Increasingly, many observers are noting, for instance, how cities of high population and administrative worth to the government appear to have become among the main targets of modern-day terrorism for a variety of strategic and cost-effectiveness reasons.[106] This relationship has been verified by statistical[107] and GIS based studies,[108] some of which indicate that that sixty percent of all terrorism is targeted at cities and resulting in ninety percent of all injuries.[109] Other times, locations are selected for their symbolic meaning and value.[110] For instance, cities with global or regional status are found to be particularly meaningful targets for signaling government vulnerability and humiliation.[111] With a focus on the specific goals of terrorist groups, we may therefore see religious groups targeting civilian sites of perceived amoral activities;[112] right-
wing groups targeting political, government, and military locations;[113] oppressed groups targeting sites of exclusion and wealth such as nightclubs, cafes, and shopping malls (e.g. in Palestine and Ireland);[114] to exploited groups targeting the means of exploitation, such as the oil tankers that are perceived as exploiting local resource wealth in Nigeria. The basic logic of both strategic and symbolic targeting is not one of random hit-and-run, but rather one of staging repeated attacks against the same location, a pattern known as reinforcement.[115] In several sub-national GIS studies, previously attacked locations are particularly prone to experience future attacks.[116] By geo-visualizing terrorist attacks in New York, Jerusalem, London, and Istanbul, Savitch similarly observed how terrorism tends to gravitate toward a critical downtown area or center using concentrated and repetitive attacks.[117] The aim of this tactic may be to intimidate, psychologically alienate, weaken the confidence, and drive out people from certain public places, as Mustafa has suggested.[118] The logic of terrorist targeting then is spatially dependent and results in self-reinforcing hotspots across a given landscape. Yet these patterns are never quite stable over time, giving rise to other spatial patterns. Earlier in the article, it was noted how the literature has emphasized that terrorism can exist in both territorial and non-territorial settings. One major difference between these two types of terrorism can be seen in the dynamics of their targeting strategies. Thus, we may observe two main targeting strategy dynamics.[119] First, terrorism at the hands of territory minded actors tends to result in patterns of gradual spatial diffusion to close and nearby areas of convenience (i.e., contiguously/contagiously).[120] Contagious diffusion of terrorist attacks tends to occur when the government is weak and the terrorists are tied to territory and are on the defensive. In such situations their strategy often aims to ensure control of their own territory, strengthen their support base, and mobilize the population in their close vicinity.[121] For instance, LaFree et al. were able to detect such a pattern in Euskadi Ta Askatasuna (ETA) related attacks in Spain during the early phase when attacks centered in and around the Basque Country, [122] often in spatio-temporal bursts of localized violence, as found by Behlendorf, LaFree, and Legault.[123] Conflict and insecurity may help spread terrorism across borders as geo-statistical methods have shown the existence of a regional spillover effect, where regions of transnational terrorist attacks increase the likelihood of attacks spreading to neighbouring countries.[124] Second, in peaceful settings dominated by a strong government, non-territorial groups tend to resort to terrorism in a more spread-out manner characterized by multiple hotspots. Since they do not control any territory, the tactic is more focused on targeting key enemy locations throughout their vast operating ranges. As new hotspots begin to appear far away from each other, we are observing a pattern known as hierarchical diffusion,[125] where new targets are selected based on a hierarchy of preferred target characteristics, as discussed previously. Figure 3 illustrates these two patterns with an overview of terrorism in the United Kingdom. Perhaps resulting from many different groups involved or different levels of territorial control, the map highlights a contagious pattern in Northern Ireland and a hierarchical pattern in Great Britain. These patterns
appear as expected, given the higher level of instability and territorially-minded groups in Northern Ireland. To examine the reasons for these differences more in-depth and across different cases can be a useful avenue for future research.

Figure 3. Two aspects of spatial patterns to terrorist attacks, n=248 events across 78 place-names. Data source: Global Terrorism Database.

Although the conventional literature has provided many insider examples based on fieldwork with terrorist groups and members, the geographical literature mentioned in this section has been unique in suggesting the spatial dimensions of terrorist activities. Some of these activities, like
networking, planning, and attack execution have been studied mostly with a focus on non-territorial terrorism contexts; how these practices differ when looking at territorial terrorists remains an interesting topic for future research. The research on targeting strategies, however, has given some detailed insights into the differences between territorial and non-territorial terrorism. When considering the possibility of multiple terrorist groups with different territorial capacities and goals, the resulting attack pattern is likely to be quite complex and makes it necessary to have data that consistently identifies the group responsible for the attacks in order to compare each group’s territorial nature with the resultant attack patterns. Doing so may help bolster the finding reported here that territorial and non-territorial contexts influence groups to target different places through different patterns. However, the instances in which this finding does not hold should be explored further, illuminating such intervening factors as organizational in-fighting taking precedence over territorial aspirations. Partially predictable patterns of terrorist activities have been used by some researchers to model and infer group responsibility with regard to specific attacks.

**Terrorism’s Impact on Society**

Despite our best efforts to understand and prevent terrorism, this asymmetric form of conflict-waging is not likely to disappear entirely as a viable form of politics of contention conducted by various societal actors. Realizing this, a third group of geographically minded scholars have rather focused their efforts on helping people, institutions, and society to cope with, prepare for, and mitigate the negative effects of terrorist attacks. Such efforts require an understanding of terrorism’s associated processes of societal change and effect, parts of which the conventional literature has already explored. But without knowing their spatial manifestations and scopes of influence, our understanding can only remain limited. The contribution of the geographical literature has been to further our understanding of how the consequences of terrorist attacks play out across space, how they change the spatial workings of society, and thus what it means for a world that may have to live with terrorism.

One of the most widely-held assumptions about terrorism is that it achieves change in the personal and psychological realms of individuals in terms of fear and terror. Yet new publications are beginning to put this into question. While terrorism’s effects on national levels of threat perceptions have been well studied in the past, only recently have its sub-national local effects been explored. Studies on risk perception have traditionally looked at demographics and psychological factors to explain why some people are more or less worried about, and impacted by, terrorism. Recently however, trauma research has begun to incorporate spatial queries using both quantitative and qualitative methods. It was generally found that terrorism risk perceptions are limited to those people within close proximity to real or perceived targets of terrorist attacks. Since in the case of real attacks “the events themselves [would] saturate…life most
intensely in their immediate proximity, through personal stories, physical reminders, and direct experiences,”[131] the usual explanatory factors for risk perceptions, such as demographics, are found to function merely as moderators of the more primal distance effect.[132] Thus, the terrorizing effects of terrorism are confined to the immediate vicinity of (perceived) targets. Health efforts to calm anxious populations may be better off focusing on those specific locations rather than on specific demographic groups as most people appear to be unaffected.

Concurrently other studies have highlighted people’s resilience against terrorism; that is, their ability to partially move beyond the fear-inducing effects of terrorism and restore the normalcy of everyday life.[133] This message is conveyed through studies suggesting that terrorism’s effect on people’s residential preferences and housing lets are only minor and mostly short-term. [134] It was also suggested that although terrorism decreases tourism, tourists simply relocate to less troubled vacation spots nearby.[135] Yet, it should not be doubted that terrorism significantly affects people in other ways, such as altering their daily routines, general welfare, and even safety, and geographical perspectives have helped to highlight how. When terrorists belong to a minority group, the resentment it produces is likely to result in discrimination and harassment of the implicated group, such as in public places like bus stops and shopping malls. Qualitative GIS visualization techniques have been used to show how this causes minorities to limit their time spent outside and change their routines to avoid certain areas of the city.[136] As such, the negative social effects may function mostly as a backfire effect against the terrorists’ own alleged constituents rather than at their intended targets.

Economic activity is another factor greatly affected by terrorism. Yet this impact may be considerably more local and less ominous than previously thought. H. Gong and K. Keenan demonstrated that the September 11th attacks, and worries that followed, entered into the locational considerations of financial firms in downtown New York as many were relocating to the suburbs. Yet this was mostly temporary and followed by a move back to the downtown area a few years later. In the process, these firms adopted new modes of decentralization and dispersal, initiating a break from the previously centralizing tendencies of globalization.[137] Although such shifts toward non-permanent, spread out, and duplicate offices of operation initially hurt business economics, management studies have also argued that doing so can provide the best resistance against the shocks of terrorist attacks.[138] In addition to changing the mindsets and behaviors of existing businesses, R. T. Greenbaum, L. Dugan, and G. LaFree showed in their disaggregated study of Italy that terrorism also scares away new business formations and expansions, but that this may be mostly limited to reducing employment and hurting the economy at the local level.[139] J. de Sousa, D. Mirza, and T. Verdier found that part of the economic damage actually is self-inflicted by the heightened security response of governments and the economic obstacle this poses to businesses, and that it is this security-business trade-off that tends to spread from the targeted country to its neighbors in a ripple wave of fear and security reactions.[140] Other research suggests that terrorism’s disruptive effects on local
economies are greater in regions that are already underdeveloped and poor, as N. Ocal and J. Yildirim found in their subnational study of Turkey.[141] While it appears that terrorism in the long run shrinks urban extents and urban land-use,[142] this may just as well be a result of counter-terrorism responses as argued in the critical literature. These findings suggest that while it seems clear that terrorism at least harms local economic activity, prior economic development seems to provide a partially protective shield against terrorism and that affected areas grow increasingly resilient against these damaging effects.[143]

Perhaps the direst consequence of terrorism is that it can influence a population’s political sympathies by “thrusting” political debates into apolitical spaces, thus creating politicized places, which initiates changes in the local political climate.[144] In cases where (reported) levels of terrorism are relatively low, as in China, it has been observed that spatial proximity to the attacks correlates with tolerance and understanding of terrorist grievances and less support for harsh counter-terrorism policies.[145] This fits with C. Berrebi and E.F. Klor’s finding that terrorism may solidify left-leaning voting behavior as long as it stays below a certain threshold.[146] However, once levels of terrorism escalate in frequency and intensity, local populations are driven towards the political right. Berrebi and Klor studied terrorism’s impact on local voter behavior in Israel and found that if the violence is sufficiently frequent voters shift towards the right in the hope that the right bloc will militarily root out the terrorists.[147] Similarly, in Turkey, A. Kibris found that attacks against security forces weakens the vote for the affected district’s ruling party and generally strengthens the vote for right-wing parties.[148] This has implications for national-level political dynamics during terrorist campaigns. Since terrorism tends to be spatially concentrated in certain parts of a country, the population will tend to be divided between those who are threatened and those who are safe. If, as suggested above, proximity to terrorism matters, we should therefore expect to see a polarization of political sympathies on the national scale, where the safe population turns leftist and the threatened population turns rightist.[149] This political polarization might be what explains how terrorism is sometimes used in peaceful settings with the intention for escalation into more widespread civil war, overthrow of the government, and large-scale social change.[150] Other politically detrimental effects of terrorism include how, as shown by GIS studies, patterns of past political violence and local climates of unrest may lower the threshold for resorting to terrorism and even inspire or motivate others to attack the same locations, thus influencing the locations of future terrorist tactics.[151] This is beginning to be accounted for in statistical studies, where the motivating effect of previous terrorist attacks on terrorist patterns at a given point in time can be separated and excluded from the effect exhibited by structural characteristics of the targeted areas and thus help in identifying and measuring the root causes of terrorism.[152]

Only three of terrorism’s many societal impacts have been mentioned here. The most dramatic impacts were noted for conflicts where the terrorists are territorially grounded. The political effects may prove to pose the greatest despair. By polarizing political climates in fragile
societies, and incurring invasive government security measures, terrorism shrinks the spatiality of everyday lives, mobility, opportunity, and cosmopolitan aspirations that we commonly associate with globalization and prosperity. Yet, in these same countries the marginal economic and social effects suggest some hope for surviving terrorism, especially where violence is more widespread yet better adapted and accustomed to. People, economic development, and globalization itself may be inherently adaptable and resilient against terrorism, suggesting a continuation of globalizing tendencies, resiliency, and hope. The various effects of territorial terrorism, then, somewhat keep each other in a balance that prevents its negative consequences from taking over. Ironically, people from highly developed and stable countries tend be more concerned about non-territorial terrorism, which appears to be the overall least dramatic and worrisome in terms of impacting societies. In either case, if there is one impact that both types of terrorism consistently have on societies, it is that they highlight the persistence of resiliency and cohesion in the targeted communities.

**Conclusion and Prospects for the Future**

This paper has traced the origins and recent appearance of geographical research on terrorism, and has shown how spatial perspectives contribute to our understanding of terrorism. Through the organizational framework of territoriality, three main topics were explored and their contributions highlighted. First, the specific geographies and root causes of terrorism were explored, suggesting that understanding the roots of terrorism requires a geographic attention to local-level failures of governance that may give rise to grievances and opportunities in terrorist “black spots” in both the developing and developed world. Second, although insider studies of terrorist groups have been conducted in the past, empirical studies from a spatial perspective can help construct a detailed spatial narrative of the attack cycle and therefore also ways to police and prevent specific attacks. Third and last, spatial perspectives can help in understanding that while terrorism has many negative impacts on society, these are spatially limited, and its other effects seem much less malevolent, so as to give hope for positive resilience since the negative impacts are spatially and temporally limited, identifiable, and potentially possible to mitigate. For each aspect, great differences were found between territorial and non-territorial related terrorism, suggested that future research should accept and be explicit about their focus on both these types of terrorism. Geographical research has been crucial for informing this framework.

In the beginning of this article it was noted that geographical perspectives in terrorism research remains highly unrecognized. Despite this, it appears that increasingly many scholars are beginning to notice, spread awareness, and encourage the future potential for using geographical perspectives and methods. Gary LaFree recently suggested that the future of terrorism research holds great prospects for “geospatial analysis” where descriptive point maps and advanced
computer analysis of spatial data could be useful avenues for future research. Emphasizing the crucial role of terrorist event databases to spatial analysis, he hinted that there should be a greater focus on “their spatial characteristics” as opposed to the more traditional focus on “their temporal characteristics.”[155] One group of researchers held a special seminar discussing the need for spatial data and analysis of terrorism.[156] The focus on geo-referenced datasets and GIS has indeed been at the core of many of the original methods and insights found in the geographical terrorism literature. Such data and methods have enabled greater attention to local factors and experiences. This, in turn, has led to more informed understandings of the terrorist system.[157] By showing contributions from spatial perspectives and approaches to the study of terrorism, this article hopes to make terrorism scholars and others more aware of this considerable, and yet widely unknown, body of literature. Just like time and history, space and geography are quintessential aspects of our social world that cannot be ignored.[158] Given that conventional terrorism studies has been criticized and described by some critics as stagnant, and conducted largely from the perspectives of time and structure, we may better understand why space has recently been incorporated as a consideration in the study of terrorism. “War,” comedian Paul Rodriguez said, “is God's way of teaching us geography.”[159][160] While this was meant to be joke, the truth is that conflict drives research on people, places, and interactions. Scholars are likely to continue embracing geographical perspectives and providing original contributions in the study of terrorism. It would be greatly beneficial if these geographical contributions and perspectives are met, welcomed, and engaged with by the broader community of terrorist researchers.

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About the Authors

Karim Bahgat is a graduate student at the University of Tromsø's Center for Peace Studies, Norway. His research activities are centered on topics of terrorism and other forms of political violence with the aid of Geographic Information Systems (GIS) and other quantitative analyses, manual coding and construction of relevant datasets, and automated geo-referencing of non-spatial data using Python scripting. Currently, Bahgat is working on his thesis where he is combining geo-referencing methods with survey data in order to bring local opinions and attitudes about the use of violence into the quantitative as well as geographic study of conflict.
Email: kimokebab@hotmail.com.

Richard M. Medina is an Assistant Professor in the Department of Geography and GeoInformation Science and Faculty in the Center for Geospatial Intelligence (CGEOINT) at George Mason University, Fairfax, VA. He previously worked as a Research Scientist at Oak Ridge National Laboratory in the Geographic Information Science & Technology (GIST) group. His research interests and publications are in areas of geography and terrorism, vulnerability, complex systems, and Geographic Information Systems (GIS).

Email: rmedina3@gmu.edu.

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### SPECIAL ACCESS

- **Canada**: Archives of forensic political terrorism in Canada, 1960-1995
  - Attacks: Canada
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  - Database
  - Contact author
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- **India, China, and Southeast Asia**: The prevention of terrorist violence: Analyzing target selection within the IRA and ETA
  - Attacks: India and Northeastern Ireland
  - 1995-2003
  - Database
  - Contact authors
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- **United States**: Understanding International Terrorism: Climbing Patterns, Motivations, and Prevention
  - Attacker: World
  - 2008-2014
  - Database
  - Contact authors
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- **Mohamed and Manning**: TERROR I
  - Attacks: World
  - 1990-2007
  - Database
  - Cost USD: City variable
  - Only informational attacks

- **ISI TERRORDB & Security Intelligence & Analysis**: ISIS Terrorism Events Spatial Layer
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- **ISI TERRORDB**: ISIS Terrorism Events Spatial Layer
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  - Cost USD: Yes, unknown what type

- **INSA Institute for the Study of Violent Groups**: Violent Extremism Knowledge Base (VXDB)
  - Attacks, effected groups: World
  - 2007
  - Database
  - Restricted to cooperating agencies and researchers
  - Yes, unknown what type

- **CNS at the Monterey Institute for International Studies**: Monterey WMD Terrorism Database
  - Attacks, WMD: World
  - 1900-Present
  - Database
  - Restricted to government employees
  - Yes, unknown what type
Notes


[3] Only the most relevant journal articles, books, working papers, and organizational project reports relating to terrorism as a social phenomenon is included; the article is generally not concerned with other forms of publication or research pertaining to government counter-terrorism practices and issues.


[25] Examples of places offering courses on the geography of terrorism include Park University in Missouri, Texas A&M University, University of Utah, George Mason University, and Pennsylvania University. For detailed coverage of what goes on in one of these classes, see the recent online article by Jessica Folkema, “Interim: The Geography of Terrorism,” in Rob Kitchin and Nigel Thrift (eds.), International Encyclopedia of Human Geography. Oxford: Elsevier, 2009.


[30] Amidst a tide of humanist, structuralist, and feminist writings, an “outgrowth” of positivist geography called behavioral geography did continue to hold some sway but was focused mostly on how humans psychologically cognate and interpret space: Phil Hubbard, Rob Kitchin, Brendan Bartley, and Duncan Fuller, Thinking Geographically: Space, Theory and Contemporary Human Geography. New York: Continuum, 2002: 35.


[32] The figure is based on data representing journal articles collected by the authors during the search for literature while writing this paper. Journal articles were included in the ‘Geographers’ category if at least one of the authors had one of their degrees in geography, was affiliated with a geography department, or showed evidence of prior publications dealing with geography. Articles were excluded from chart if background information on author(s) could not be obtained. In determining whether an article belonged to the critical, empirical, or applied literature, a subjective comparison was made to each literature's distinctive characteristics, as they are described in this paper. Articles that seemed to overlap several of the categories were assigned to the one that it resembled the most.

[33] For instance, after reviewing existing terrorist/terrorism databases, Rossmo and Harries found their spatial precision to be inadequate for their purposes and had to circumvent the problem by obtaining geo-referenced terrorism data directly from the Turkish National Police. D. Kim Rossmo, and Keith Harries, “The Geospatial Structure of Terrorist Cells,” Justice Quarterly 28, no. 2 (2011): 221-48, 229.


[36] Examples include the important effects that the policies of national governments or global loaning institutions can have on the rise of terrorism in particular locales, as well as the broad focus necessary to understand and explain the wide reaches of transnational terrorism.


[38] For instance, after reviewing existing terrorist/terrorism databases, Rossmo and Harries found their spatial precision to be inadequate for their purposes and had to circumvent the problem by obtaining geo-referenced terrorism data directly from the Turkish National Police. D. Kim Rossmo, and Keith Harries, “The Geospatial Structure of Terrorist Cells,” Justice Quarterly 28, no. 2 (2011): 221-48, 229.


[55] While a host of geographical studies have looked at violence in Northern Ireland, very few of them have framed the violence as terrorism and are therefore not included in this article. See for instance: Michael Poole, "Has It Made Any Difference?: The Geographical Impact Of The 1994 Cease-Fire In Northern Ireland," *Terrorism and Political Violence* 16, no. 3.


[68] This offers a solution to recent debates about whether to define terrorism in the action or the actor sense. For instance, the action-centered approach is defended by Findley and Young in response to Sanchez-Cuenca and De la Calle’s call for a more actor-centered approach: Michael G. Findley and Joseph K. Young, “Terrorism and Civil War: A Spatial and Temporal Approach to a Conceptual Problem,” Perspectives on Politics 10, no. 2 (2012).

[69] Transnational terrorism is commonly thought of as terrorism that crosses national borders in one of several ways, including but not limited to: groups consisting of members from multiple nationalities and having goals that apply to entire regions or the entire globe; groups operating beyond the borders of their home-country; perpetrators and victims being from different countries regardless of the location of the attack; attacks on embassies; airplane hijackings, and so on. These criteria must be carefully selected when choosing a definition, because transnational terrorism is not a singular phenomenon; it can be divided into various sub-types ranging from regional, internationalized, and global. Cf.: Jaideep Saikia, and Ekaterina Stepanova (eds.), Terrorism: Patterns of Internationalization (New Delhi: Sage Publications India Pvt Ltd, 2009).


the core of the world system is most frequent during times of hegemonic decline. Omar A. Lizardo, and Albert J. Bergesen, “Types of Terrorism by World System Location,” Humboldt Journal of Social Relations 27, no. 2.


[94] Savitch and Ardashev found three groups of cities that were experiencing terrorism: those that were attacked from the outside for their global or regional status to gain publicity; those that had populations ready to be mobilized for violence, such as prisoners, unemployed, and people from segregated communities, as well as leaders with access to weaponry; and those that were poorly managed and failed to provide for large parts of their populations, thus creating substantial grievances that motivate some to resort to terrorism. It is the second and third group of cities that are interesting here since they focus on how cities can be the breeding ground and root cause of its own terrorism. However, the first group is of interest later in the article when the focus is on how some cities are the targets but not the cause of terrorism. H. M. Savitch and Grigory Ardashev, “Does terror have an urban future,” Urban Studies 38, no. 13 (2001). If cities cause terrorist-related grievances by bringing together socially diverse peoples, this may explain why a study on Turkey found the number of ethnic groups to be a predictor of terrorism at the provincial


[109] H. M. Savitch, and Grigoriy Ardashev, "Does terror have an urban future," Urban Studies 38, no. 13 (2001);


[128] This experimental work could potentially lead to useful solutions to the problem of missing data on the group perpetrator variable that is plaguing many terrorism event datasets. See: Joshua Hill, “Classification of Terrorist Group Events in the Philippines—Location, Location, Location,” White Paper (The Institute for the Study of Violent Groups, Huntsville, Texas, 2010), http://www.academia.edu/232522/Classification_of_Terrorist_Group_Events_in_the_Philippines_-_Location_Location_Location; accessed December 3, 2012.


Ibid.


[150] Findley and Young mention this rationale and observe how in certain countries terrorism has been more frequent prior to and leading up to civil wars: Michael G. Findley and Joseph K. Young, “Terrorism and Civil War: A Spatial and Temporal Approach to a Conceptual Problem,” Perspectives on Politics 10, no. 2 (2012).


[157] This parallels Mary Parker Follett’s philosophy that greater understanding of the success of democracy hinges on greater attentiveness to the voices and experiences of local communities, and incorporating these into decision-making. Maria Veronica Elias, “Governance from the ground up: Rediscovering Mary Parker Follett,” Public Administration and Management 15, no. 1 (2010).


[160] The origin of this quote is unclear, but believed by some to be part of a comedy act by Paul Rodriguez in 1987. There seems to be no credible evidence that the quote is from Ambrose Bierce, who is also believed to be the originator of the quote. For further information please see [http://www.ambrosebierce.org/notices.html](http://www.ambrosebierce.org/notices.html) (accessed December 19, 2012).