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Terrorism in Pakistan: Incident Patterns, Terrorists' Characteristics, and the Impact of Terrorist Arrests on Terrorism

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Abstract

This dissertation, in a 3-paper format, uses three data sets to study three aspects of terrorism in Pakistan. In the first paper, using data from the GTD, I describe empirically the temporal and spatial patterns of terrorism incidents in Pakistan from 1974 to 2007. In addition, I also describe the patterns in target types, weapon types and terrorist types and the patterns prior to and following the U.S.-led invasions of Afghanistan and Iraq. Analysis methods include the univariate time series, descriptive statistics and the GIS. The study offers new insights on the measurement of terrorism, the cyclical nature of terrorism, the role of conflict, the choice of weapons, the sponsorship of terrorism, the selection of targets and the reactionary nature of terrorism. The second paper analyzes personal, socioeconomic and demographic characteristics of arrested terrorists in Pakistan from 1990 to 2009. I analyze police data on 2,344 terrorists using the GIS, univariate and bivariate analyses. Significant group differences, as well as differences based on geography lead to the conclusion that a generic profile of terrorists is almost impossible. One factor universally present in the circumstances of almost all the terrorists is that they belong to some area of conflict. In the third paper, I test Sherman's theory of defiance (1993) to discern how arrests of different terrorist types and terrorist arrest types result in different types of reactions—defiance, deterrence, or irrelevance. Terrorist types can be divided into hardcore terrorists and peripheral terrorists, and arrest types can be divided into ordinary arrests or arrests by killings. I use 20 years of data from eight regions of the Punjab. Using fixed-effects cross-sectional time series (long panel), instrumental variable approach and Poisson distribution, I conclude that: aggregated arrests, ordinary arrests, and arrests of hardcore terrorists, in the current period, are associated with higher expected incidence and seriousness of terrorism in the same six month period. Further, that as compared to peripheral arrests, hardcore arrests generate more defiance. Lags of arrests and ordinary arrests decrease the expected incidence and seriousness of terrorism, suggesting a possible decay in defiance after the first six months.

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Randall Collins

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John M. MacDonald

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TERRORISM IN PAKISTAN:
INCIDENT PATTERNS, TERRORISTS' CHARACTERISTICS,
AND THE IMPACT OF TERRORIST ARRESTS ON TERRORISM

Syed Ejaz Hussain

A DISSERTATION

in

Criminology

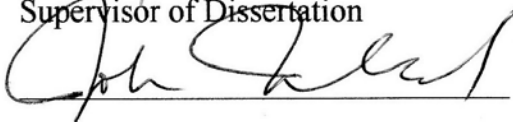
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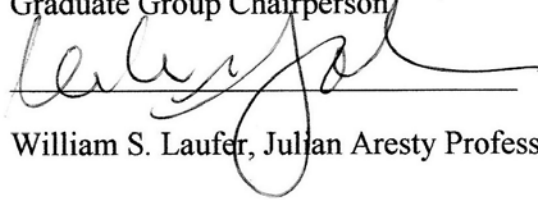
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DEDICATED TO

Pakistan

Police Service of Pakistan

My Late Parents, Syed Fateh Hussain and Syeda Ghulam Zahra

And to the Children of Pakistan Who Say¹

Baba (father) I am afraid!	Baba, my Miss (teacher) says
“From tomorrow All children	Have to stay at home, study at home”
I have heard	A big man, an ‘Uncle’ with big black whiskers will come wearing a ‘Bomb’
All children will die!	Baba why would uncle want to kill us
Have we done something bad?	Why is Uncle angry at us?
Baba, should I give him my doll?	Or my blue little box of colors, remember?
The one you gave me for my last birthday	And that lovely red pony (hair tie), the one with a butterfly
Should I give him that one too?	Then he won’t kill me?
Remember Baba once when	I had injured my hand
It had hurt so much	Even bled a little
I had cried so much.	Is a ‘Bomb’ very big, Baba?
Will it hurt a lot perhaps?	Baba, I am afraid!

¹ English translation of Atif Javed Atif’s Urdu poem *Baba, Mujh Ko Der Lagta Hay*, by an anonymous translator. Brackets added by author of the dissertation to make the poem accessible to non-Urdu speakers.

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*I am stronger; I am wiser; I am better, so much better...
Never would have made it...Never could have made it without you (Marvin Sapp).*

I enrolled at Penn to study police culture. Instead, I ended up with a dissertation on terrorism in Pakistan. The journey of a Ph.D. student is seldom linear. Difficult journeys tend to make the list of your benefactors much longer. Therefore, I owe my gratitude to many individuals and institutions, some of them named here and others not.

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Notwithstanding the extensive help from my benefactors, I am responsible for any errors and omissions in this dissertation. I own all the findings and recommendations.

Syed Ejaz Hussain

Philadelphia, U.S.A.

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ABSTRACT

TERRORISM IN PAKISTAN: INCIDENT PATTERNS, TERRORISTS' CHARACTERISTICS, AND THE IMPACT OF TERRORIST ARRESTS ON TERRORISM

Syed Ejaz Hussain

John M. MacDonald

This dissertation, in a 3-paper format, uses three datasets to study three aspects of terrorism in Pakistan. In the first paper, using data from the GTD, I describe empirically the temporal and spatial patterns of terrorism incidents in Pakistan from 1974 to 2007. In addition, I also describe the patterns in target types, weapon types and terrorist types and the patterns prior to and following the U.S.-led invasions of Afghanistan and Iraq. Analysis methods include the univariate time series, descriptive statistics and the GIS. The study offers new insights on the measurement of terrorism, the cyclical nature of terrorism, the role of conflict, the choice of weapons, the sponsorship of terrorism, the selection of targets and the reactionary nature of terrorism. The second paper analyzes personal, socioeconomic and demographic characteristics of arrested terrorists in Pakistan from 1990 to 2009. I analyze police data on 2,344 terrorists using the GIS, univariate and bivariate analyses. Significant group differences, as well as differences based on geography lead to the conclusion that a generic profile of terrorists is almost impossible. One factor universally present in the circumstances of almost all the terrorists is that they belong to some area of conflict. In the third paper, I test Sherman's theory of defiance

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PAKISTAN

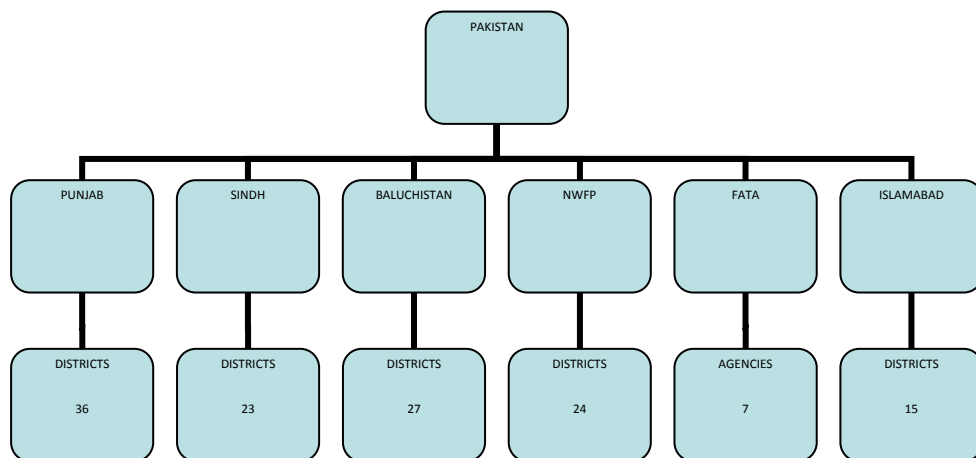
Pakistan was established in 1947. Historically a part of India, the area comprising contemporary Pakistan had been ruled primarily by Hindus, Muslims and the British. Before the British formally colonized this territory in 1857, Muslims had ruled this area for about 1,145 years. As shown in figure 1, Pakistan shares borders with Afghanistan to the northwest, China to the north, India to the east, and Iran to the west. In the south, it is located on the Arabian Sea, very near to the mouth of Persian Gulf, which is one of the biggest sources of oil in the world. Pakistan has an area of 3, 40,133 square miles and an estimated population of about 177 million, 95% of which is Muslim. Pakistan is the sixth most populous nation in the world, and the second biggest Muslim country. Pakistan is bigger than Russia in population. It is almost equal to France and the United Kingdom combined, in area.

Pakistan, for historical and administrative reasons, has been divided into four provinces and four areas administered directly by the federal government. Shown in figure 2, the four provinces include the Punjab, Sindh, North West Frontier Province (NWFP) and Baluchistan, and they have their provincial governments under chief ministers and governors. The federally administered areas consist of Islamabad Capital Territory (ICT), Federally Administered Tribal Areas (FATA), Northern Areas and Azad Jammu and Kashmir (AJK). The first three are governed by the federal government. The AJK is the Pakistani controlled part of the disputed area between India and Pakistan. It

Figure 1. Map of Pakistan



Figure 2. Administrative Divisions in Pakistan



has its own president and prime minister, but its defense, foreign policy and currency are with the federal government. These provinces and federal areas are further divided into 121 districts and seven agencies (the administrative equivalent of a district). Districts and agencies are the basic administrative units within the provinces and the federal areas. The ICT, Northern Areas and the AJK are combined as Islamabad in figure 2.

Pakistan has a multi-ethnic, multicultural, and multilingual society. According to the 2008 census, the population is comprised of several ethnic groups: Punjabis (44.15%), Pashtuns (15.42%), Sindhis (14.1%), Seraikis (10.53%), Muhajirs (7.57%), Baluchis (3.57%), and Others (4.66%)². Pakistan hosts one of the largest refugee populations in the world. About 8 million Muhajirs (refugees) — arrived from India after independence in 1947. Added to them are approximately 1.7 million Afghan refugees. English is the official language of Pakistan and is used in official business, government and legal contracts. All the provinces have their regional languages, such as Punjabi, Sindhi, Pashto and Balochi. Urdu is the national language, and is understood practically everywhere. Pakistan has 95% Muslims, 1.85% Hindus, and 1.6% Christians. Out of the 95% Muslim population, 75% are Sunni and 20% are Shia. As such, Pakistan has the second largest Shia population in the world after Iran. Pakistani society is largely hierarchical, with many tribes and castes varying in social status. The FATA remains highly conservative and dominated by centuries-old regional tribal customs.

² Most of the statistics in this introductory part come from Wikipedia: <http://en.wikipedia.org/wiki/Pakistan>

Conflicts resulting from this diversity created mainly four types of terrorist groups in Pakistan: language-based, sectarian, race-based and religious. Muhajirs, especially refugees from India who settled in Karachi, had their grievances about the transfer of the country's capital from Karachi to Islamabad, resultant loss of power in the bureaucracy, lack of jobs, shortage of housing and paucity of transport. However, there is lot of ambiguity about what they actually wanted as a solution. People have blamed them for demanding a separate state, or a separate province, or at least a complete control of the city governments of Karachi and Hyderabad, in the province of Sindh.

Grievances between Shias and Sunnis date back to the very early period of Islam. In Pakistan, Deobandis allege that Shias use abusive language against prominent companions of the Prophet Muhammad (PBUH) and hence they want Shias to be declared a non-Muslim (infidel) minority in Pakistan. On the other hand, Shias' claim is that they are about 20% of the total population and very active in national politics. They are considered Muslims everywhere including Saudi Arabia. The Darul-Aloom Deoband, the founding madrassa of the Deoband sect of Islam, considers Shias as Muslims except for the ones who meet certain conditions. Shias claim that hardly a Shia in Pakistan would meet these requirements. Their Fatwa (86/84=L/1429) about Shias is reproduced below:

If a person prefers Hadhrat Ali (the son-in-law of Prophet Muhammad (PBUH)) on other sahabah (companions) and he does not believe in other beliefs of Shias, then this particular person is not kafir (infidel). But, a Shia is kafir who believes that Hadhrat Jibreel (the Angel Gabriel) did mistake in conveying revelation to

the right person or Hadhrat Ali is god, or one who accuses Hadhrat Ayishah (one of the wives of Prophet Muhammad (PBUH)) of adultery or professes that the Quran is corrupted or denies Hadhrat Abu Bakr (one of the companions) of being a sahabi³.

Baluchis are less developed economically, and they have less representation in civil services and military. They allege the lack of provincial autonomy and getting fewer resources from the federal government, as the resources are distributed on the basis of population. They have the minimum population and the maximum area. Natural resources in the province are controlled by the federal government, allegedly without giving them adequate share of those rents. The solution they seem to be proposing is a separate country of Baluchis based on their race. They are 3.57% of the total population of Pakistan and spread across the country.

The religious militants in Pakistan are varied and their expressed demand is to enforce *Sharia* (Islamic law) in the country, and their contemporary ideal is the erstwhile Taliban government in Afghan established by Mullah Omar. Their opponents argue that there is nothing in the laws in Pakistan which defies the laws of Islam. The majority of Pakistani citizens would want to live a modern life, instead of following the obscurantism of Taliban. A practical issue they point out is as to what brand of *Sharia* should be

³ Darul-Uloom, Deoband website <http://darulifta-deoband.org/viewfatwa.jsp?ID=10440>, retrieved on April 04, 2010, at 9:40 a.m. Brackets added by the author.

imposed in Pakistan. There are practically as many interpretations of Islam as there are religious leaders. And there is an element of absolutism in all these interpretations.

PAPER 1

TERRORISM IN PAKISTAN: CHANGING INCIDENT PATTERNS

With varying motives, using the newest weapons, engulfing a wider area, and claiming more lives, terrorism in Pakistan has attracted considerable local and global attention. Consequently, a large literature has been published on root causes of terrorism in Pakistan (Asal, Fair, and Shellman, 2008; Looney, 2004); Pakistan's Jihad Culture (Stern, 2000); Madrassa Culture (Schaffer, 2008); sectarian terrorism (Grare, 2007); Pakistan's counterterrorism efforts (Riedel, 2008); Pakistan as sponsor of terrorism (Williams, 2008); and Pakistan's performance as an ally of the U.S. in its war against terrorism (Tellis, 2008). No paper specifically studies temporal and spatial patterns, patterns in weapon use and target selection, and distribution of terrorist types. If data were presented in publications (see Barshied, 2005: 21; Grare, 2007: 139), they typically just give a short-term view of annual comparisons or rates based on press or government analyses. This lack of comprehensive analysis of terrorism incidents limits our ability to formulate and test hypotheses, to do operational planning properly and to develop counterterrorism policy.

Trying to fill in this gap, this paper describes empirically the changing incident patterns of terrorism in Pakistan from 1974 to 2007 and attempts to answer the following four questions: What is the temporal distribution of terrorist incidents in Pakistan? What is the spatial distribution of these incidents? What is the temporal and spatial distribution of target types, types of weapons used, terrorist groups involved, and the number of

people killed and wounded? And what are the patterns of terrorism incidents pre and post the US-led invasions of Afghanistan and Iraq?

The rest of the paper proceeds as follows. It begins by discussing theories about causes of terrorism, describes the Global Terrorism Database (GTD) as its data source, defines the variables analyzed and explains the analytical methods used. The paper then presents results and discussion on temporal patterns, spatial patterns and distributions of victim types, weapon types and terrorist group types. Results also compare and contrast these patterns, pre and post U.S.-led invasions of Afghanistan and Iraq. The paper then concludes with a summary of the findings and their importance for theory, policy and operations.

THEORIES OF CAUSES OF TERRORISM

At least for the last 10 years, terrorism is one of the most discussed topics in social sciences. Nevertheless, social sciences lack a coherent explanation of why terrorism occurs, why it escalates and de-escalates, why certain types of victims are selected and what determines the choice of weapons. Despite some contributions by academics from political science, international relations and law, the state of theory and evidence about causes of terrorism remains in disarray. Especially the contribution of sociology and criminology in understanding terrorism is negligible. Many scholars lament the general lack of solid research and a viable theory of terrorism (see Deflem, 2004; Bergesen and Lizardo, 2004).

Facts about terrorism, revealed through research, are scattered, and the theory is fragmented. Some theories explain causal relationships between certain historical, cultural and sociopolitical characteristics of larger society, and the occurrence of terrorism. Some international level explanations discuss relations between states and the occurrence of international terrorism. However, all theories seem to be unanimous on one thing; that some type of conflict is at the base of every terrorist movement. Some theories just confine themselves to explaining what generates this conflict, while others explain how this conflict may turn into acts of terrorism. Hence, there is a strong need for developing a theory of terrorism after synthesizing the scattered facts and theories, which could offer “explanation of its causation, the dynamics of its escalation and de-escalation” (Turk, 2004: 285). The main hypothesis is that terrorism is the culmination of a conflict process. But the conflict needs some attending conditions to reach to that end.

The following scholars describe different factors generating conflict. Crenshaw (1990) lists two types of societal factors associated with terrorism: permissive factors and direct situational factors. Permissive factors include modernization, industrialization, and urbanization, which create vulnerabilities, opportunities and motivation. Direct situational factors include grievances, discrimination, lack of opportunity for political participation and elite disaffection. Tocqueville, quoted in Brynjar and Katja H-W (2000: 17), indicates the social inequality as a factor responsible for terrorism. Engene (1998) focuses on three factors, the unsolved ethnic demands, the problems of continuity in the development of democracy, and the problems of integrating politically marginalized groups. Krueger and Maleckova (2003) consider feelings of indignity and frustration

developed in repressive political environments, as causes of terrorism. Recognizing that terrorism is a product of a blending of demographic, economic, and political determinants, a panel of the National Research Council (Smelser and Mitchell, 2002) observes that regions most likely to generate terrorist threats have a history of colonialist exploitation by Western interests, and of postcolonial economic and cultural penetration. Particularly in nondemocratic societies, conflicts generally reflect class, ethnic, racial, or religious divisions. Brynjar and Katja H-W (2000) mention state sponsorship of terrorism, hegemony, bipolarity and weak and collapsed states, as causes of international terrorism.

To explain dynamics of terrorist organizations, Boyns and Ballard (2004) construct a sociological theory of terrorism, by means of six theoretical propositions. They, quoting Scott (1990), define terrorism as “a violent response to hegemonic dominance and may represent an attempt to overcome the dominant hegemony by the creation of an alternative, a counter hegemonic movement.” According to them, terrorism (T) is a function of Counter Hegemony (CM); Resource Mobilization (RM); Counter-Institutionalization (CI); Power Prestige (PP); Ritualization (R); and Solidarity (S). They place their six propositions in the form of an equation: $T = f(CH + RM + CI + PP + R + S)$. To reproduce these propositions, the authors’ exact words are used:

1. The greater the perceived powerlessness of a counter hegemonic group, the more likely terrorist acts committed by that group against the hegemonic order are to occur.

2. The greater the access to necessary resources, the more likely terrorist groups will be able to plan, initiate and execute their strikes. The greater the globalization and democratization of educational and technological resources, the more available such resources will become and the more likely new forms of terrorism will be to emerge.
3. The greater the institutionalization or routinization of a counter hegemonic group, the more likely terrorism will be to emerge against a hegemonic order in reaction to this institutionalization.
4. The greater the imbalance in power-prestige between the hegemonic and counter hegemonic groups, the more likely a symbolic act of terrorism will transpire. Additionally, the more severe and more publicly visible the terrorist attack, and the greater the power-prestige of the victim, the more that prestige will be gained by a terrorist group within its network of power-prestige.
5. The greater the salience, legitimacy, and commitment to the symbolic nature of the objects attacked by an act of terrorism, the greater the impact of the attack and the more profound the feeling of victimization it will provoke.
6. The more successful or visible a terrorist attack, the greater the internal solidarity of both hegemonic (the victimized by the attack) and counter hegemonic (those responsible for the attack) groups.

CRIMINOLOGICAL THEORIES OF TERRORISM

Criminology of terrorism is in its infancy. Donald Black's theory of terrorism as social action is considered the first criminological theory on terrorism (Rosenfeld, 2004). Black (2004: 9) defines terrorism as the "unilateral self-help by organized civilians who covertly inflict mass violence on other civilians". By unilateral self-help, he means the one-sided handling of grievance with aggression. He takes terrorism as a means of social control because it defines and responds to deviant behavior. The social control of terrorism according to Black (2004) is an instance of the social control of social control—justice in response to something that is itself a form of justice.

While describing the characteristics of terrorism, Black (2004) takes terrorism as highly violent, well-organized and covert. It is a quasi warfare—because it is unilateral and covert, it targets civilians, not military forces and obeys no rules. He distinguishes it from crime by saying that it is moralistic in character like law and social control—it is a form of justice. Black (2004) takes terrorism as always perpetrated against superior forces. It is usually caused by a chronic grievance. Terrorism as an offense is collective.

Black (2004) argues that because terrorism is crime as well as social control, it is difficult to deter with punishment or other forms of social control. Just as terrorism is not merely a form of crime, so then the social control of terrorism is not merely a form of criminal justice. Terrorism begets terrorism. He asserts that, in fact, existing theory suggests that terrorism may be effectively controlled by answering it in kind—a policy of "tit for tat"—with equal violence against civilians associated with the terrorists.

Terrorism, according to Black (2004: 17), is a rare species of social control; the conditions of its existence ultimately become the conditions of its decline. The intermingling of peoples and cultures—as the social universe shrinks; right and wrong lose the clarity that comes only with sufficient distances in social space. Therefore, the conditions of terrorism’s existence ultimately become the conditions for its demise. Black’s thesis about the control of terrorism is summarized in his statement that “terrorism’s inevitable fate is sociological death.”

Rosenfeld (2004) critiques Black’s theory of terrorism and makes some additions. He says that Black’s theory is a good starting point, but that it neglects two things: the predatory character of terrorism and the institutional conditions under which terrorism emerges and is sustained. He criticizes Black for emphasizing structures and ignoring agency. He says Black’s theory is free of thoughts, feelings, goals, purposes, psychology, and teleology—it is free of people. He takes Black’s explanation of terrorism as limited not only by conceptions of the form of but also the motivation for terrorist violence. In his opinion, Black says little about the social origin and distribution of the grievances that motivate terrorism.

While amending Black’s theory of terrorism, Rosenfeld (2004: 21) concludes that terrorism is moralistic or justice-oriented violence, accomplished by predatory or criminal means. According to him, the genesis of terrorist violence lies within a particular configuration of social institutions, at odds with the institutional triumvirate of modern society—free markets, democratic polities and religious tolerance. He adds that terrorism is collective moralistic violence requiring the co-existence of grievances and high social

distance—differences in religion, language, customs and modes of livelihood. If any of these conditions is missing, terrorism will not occur.

In sum, a wide diversity of conditions could provoke terrorism. Brynjar and Katja H-W (2000: 8) give us an idea that:

Terrorism occurs in rich as well as poor countries; in the modern industrialized world and in less developed areas; during a process of transition and development, prior to or after such a process; in former colonial states and in independent ones; and, in established democracies as well in less democratic regimes.

Because of this wide variety of conditions, “many rival explanations have been advanced but none has managed to command widespread respect” (Kegley, quoted in Brynjar and Katja H-W (2000: 8)). Despite a great deal of theorizing and research, the state of knowledge on the topic is in flux. In particular, the field of criminology, which should deal with the criminal aspects of terrorism, has yet to formulate ideas about motivational factors at individual levels, causal factors at societal levels, and enforcement systems at both the governmental and societal levels. However, the gist of the matter seems to be that conflict matters most; poverty, form of government, intergovernmental relations, race, religion, and sects are important, as long as they generate conflict. Rests of the dynamics are strategic and tactical decisions, when to divert to terrorist strategy, when to escalate, when to deescalate, what victim to chose and what weapon to use. This is exactly what Collins (1975) seems to be saying that social inequities may be causally

involved, particularly in originating conflicts, analytical or “structural” conflict theories attend more to the possibility that violence may be a product of strategic and tactical decisions in a process of ongoing conflict.

DATA AND METHODS

DATA

Initially, I proposed using data from three sources: the Global Terrorism Database (GTD), the South Asia Terrorism Portal (SATP)⁴, and the Pakistan Police forces’ records⁵. After reviewing the tradeoffs of the GTD, the SATP, and the Pakistan police, I used the GTD data only for the following reasons. First, the GTD is an open-source database maintained by the National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland and is the world’s largest database on terrorism incidents. It covers period from 1970 to 2007 and includes 8,164,100 cases, globally. Second, the GTD has a vast amount of information on 120 variables. This information enabled me to collapse some of the categories and verify

⁴ South Asia Terrorism Portal (SATP) is the biggest open source web-based data available in the South Asian region maintained by the Institute for Conflict Management, India. Information is derived from newspapers and is presented mainly in the form of descriptive news arranged chronologically.

⁵ Since 2006, Federal Investigation Agency (FIA) has started compiling data at national levels. FIA has formatted the data including variables of date and location of the incident, the weapons used and the target, the number of killed and wounded, and motive. FIA data would be the most reliable for the time period they are available.

information on the others. Third, the GTD is supervised by academicians trained in the technicalities of research, and the SATP and FIA data are supervised by police officers—in the case of the SATP, a former police officer. Fourth, the GTD data are in a ready to use format and available on CD, while FIA data were procured through request to the senior officers and the SATP data are not formatted. Fifth, the main audience of this paper is the academic community and they recognize the GTD well and are confident of its veracity. Many articles have already been published using the GTD data (see, LaFree Dugan, and Korte, 2009).

Despite all these advantages, the GTD has to be used with two warnings. First, the data were lost for 1993. Although the GTD has reconstructed the total number of incidents, people killed and wounded, details of the incidents are not available below the yearly aggregates. Therefore, analyses below year levels encounter the problem of missing values. As the missing values are less than 2% in my analysis, I deleted them case-wise. Second, as the data were originally compiled from the newspapers, the possibility of media bias cannot be ruled out.

Variables

Terrorist Incident. The GTD defines terrorism as the “threatened or actual use of illegal force and violence to attain a political, economic, religious or social goal through fear, coercion or intimidation.” Its application is confined to non-state actors. The word “incident” is defined in the American Heritage Dictionary as “a definite and separate occurrence; an event.” The GTD codebook (2009: 6) considers an incident as single if

occurring in both the same geographic and temporal point, but if either the time of occurrence of incidents or their locations are discontinuous, the events will be regarded as separate incidents.

Time and Location. The variables of time include day of the week, day of the month, month, and year during 1974-2007. The choice of 1974 as the beginning year is deliberate. Pakistan in its current geographic form exists only since 1971, when East Pakistan separated as Bangladesh and 1974 is the first year in which a terrorist incident for Pakistan is recorded in the GTD.

The GTD provides names of the location either as name of the district, city, village, or province—whatever is available. By tracing district names from village and city names, I compiled information on the variable of the district name. To tabulate data on the province level, I extracted the province name from the district name or the province/state name variable already present in the GTD.

Target Types. The GTD provided 22 categories of target types. On the basis of their commonalities, I collapsed these categories into 11 categories. For example, categories of food and water supply, telecommunication, utilities were collapsed to get a category of infrastructure and facilities. The eleven categories are listed as: private citizens, property, and businesses; infrastructure and facilities; civil administration; military and paramilitary; police; sectarian; foreigners; educational institutions; political leaders, meetings, activists; civil society institutions; music and barber shops; and minorities. Civil administration means government officials excluding officers in uniform; military

includes army, air force, navy and paramilitary forces; infrastructure means gas pipelines, train tracks, and government buildings; sectarian targets include Shia or Sunni individuals, worship places, and congregations; minorities include Christian, Hindu, and Ahmaddiyya (a Muslim sect declared non-Muslim under Pakistani law in 1974). Barber shops, music, and CD shops were combined to make category of music and barber shops. Civil society institutions include media and non-governmental organizations.

Weapon Types. By reorganizing some of the weapon categories provided in the GTD, I came up with the following types: Firearms; explosives, bombs, dynamite; incendiary; melee (hand to hand fights or with blunt weapons); projectiles (rockets, rocket propelled hand grenades, mortars); suicide bombers; and others. I made a separate category of suicide bombers and projectiles, taking them out of explosives in general to study them in detail because of their current usage in Pakistan.

Group Types. The GTD shows 82 terrorist groups involved in terrorism in Pakistan but instead of using their names, I classified these groups on the basis of their motives: sectarian, ethnic, political, Muslim militants, foreigners, and Al-Qaeda. It simplified the analysis, and furthermore it was not the group name but the group motive which mattered. For example, sectarian terrorists in Pakistan used different names—Sipah-e-Sahaba, Lashkar-e-Jhangvi, Lashkar-e-Omar, Group of 313, Sipah-e-Muhammad—but their motive was to kill people on a sectarian basis. They used different names for personal, operational, or political reasons. Therefore, I combined groups with the same basic motive as one group. Al-Qaeda, because of its importance, needed a separate

category. So I kept it separate from the categories of Muslim Militants and Foreigners, although by definition it could be included in that category.

Number of People Killed and Wounded. The GTD provides the number killed and wounded in a terrorist incident including terrorists; I counted the victims only. To investigate the severity levels of terrorist incidents, I computed the number of people killed and wounded per incident.

ANALYSES

I analyzed the data by using descriptive statistical methods, univariate time series analysis, and the Geographical Information System (GIS).

Descriptive Statistics

Descriptive statistical methods used here include, mean, median, standard deviation and graphs.

Univariate Time Series Analyses

Time series are sequences of observations ordered in time, and they have four components: trend, cycles, seasonality and irregulars. This trend component is the long term movement in a series, whereas cycles are regular fluctuations which are not seasonal. Seasonality is a component of a series which is dependent on time of the year and irregular is what is left over once the other three components of the series have been accounted for. Autoregression in time series occurs when observations in a time series at different points of time are correlated.

Spatial Analyses

For locating patterns in the geographical distribution of incidents, the best method was to use coordinates as the space point, which in this case were not available. The best alternative available in the present case was to use the district as the geographical unit to show the geographic spread of incidents. I used geographic information system (GIS) base layers for Pakistan and Asia from DIVA-GIS and used ArcGIS to make GIS maps.

RESULTS

In 34 years of terrorism in Pakistan, 2590 incidents took place in which 5840 people were killed and 11597 wounded. As shown in table 1 based on the GTD, the average number of incidents remained at 76 per year, with an average of 173 people killed and 341 wounded. The people killed and wounded per incident were 2.25 and 4.48 respectively. The median number of incident was 36, with a median number of 106 people killed and 261 wounded. The statistics of standard deviation, and the minimum and maximum in table 1 show high dispersion in the distribution of the number of incidents, killed, and wounded.

Table 1. Terrorism Incidents, People Killed and Wounded in Pakistan (1974-2007)

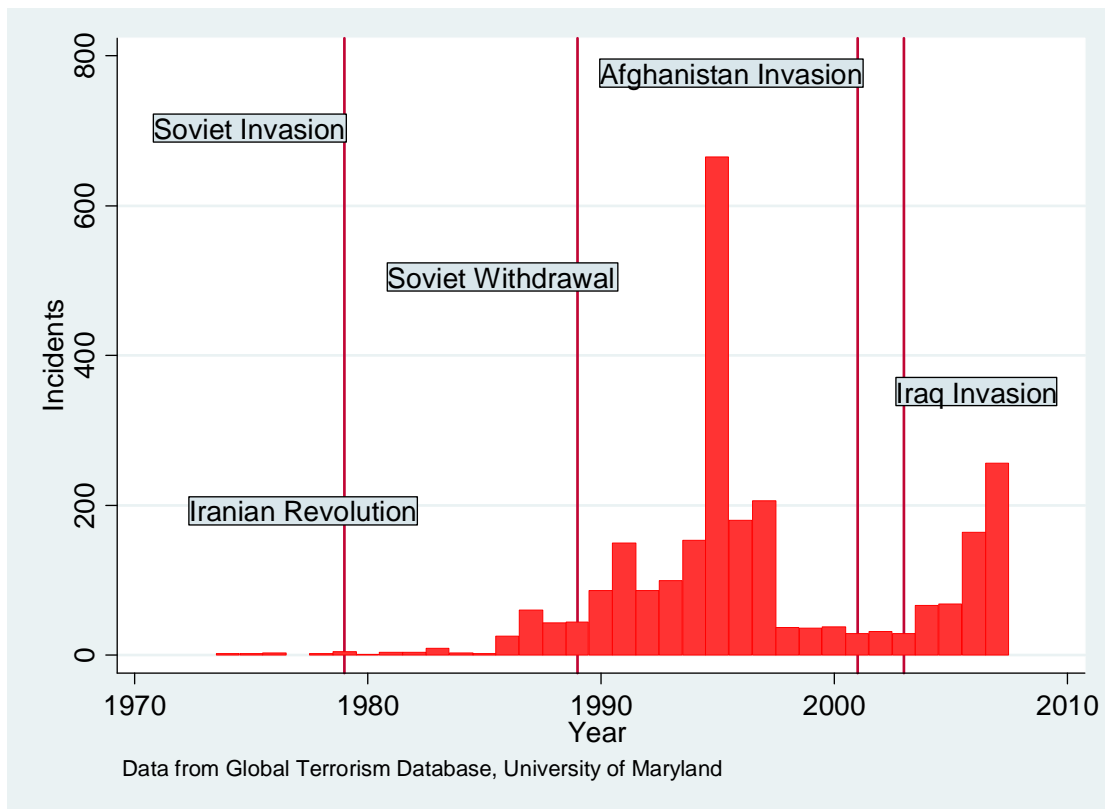
Variable	Sum	Mean	Median	Standard Deviation	Min	Max
Incidents	2590	76	36	124	0	665
Killed	5840	172	106	251	0	1273
Wounded	11597	341	261	449	0	2385

TEMPORAL PATTERNS

Before presenting and discussing the time patterns in terrorism incidents, a brief review of the macro dynamics of terrorism in Pakistan would facilitate the readers' understanding. The evolution of terrorism in Pakistan, in its present form, is the result of five internal and external factors intersecting together over the years. Please see figure 1.

First, General Zia-ul-Haque came to power in 1977 after toppling and arresting an elected Prime Minister Mr. Zulfikar Ali Bhutto. Mr. Bhutto was later executed by General Zia in 1979. A direct result of this execution was the formation of a terrorist group named Al-Zulfikar. The group committed acts of terrorism, including hijackings. Throughout his life, General Zia feared the resurgence of Mr. Bhutto's Peoples Party. Sindh was Bhutto's resident province, and hence their stronghold was a nightmare for Zia. To break Bhutto's influence in Sindh, he helped form Muhajir Qaumi Movement (MQM) (Kukreja, 2003: 143), a language-based party of refugees from India in Karachi and the other urban areas of Sindh. Violence by and against the MQM, which passed

Figure 1. Terrorism Incidents in Pakistan (1974-2007)



through certain evolutionary stages became responsible for almost 90% of terrorism in the cities of Karachi and Hyderabad and 40% in the country.

Second, General Zia, to legitimize his dictatorship and create his own constituency, enforced some Islamic laws in the country. One of the laws was a tax law named Zakat and Usher Ordinance (1980). In the meantime, the Iranian Revolution (1979) established its influence in the Shia community of Pakistan. Encouraged, Shias demanded exemption from the new tax law which was based on the Sunni jurisprudence. They also required the government to enforce Shia jurisprudence in their personal matters. Shias forcefully agitated in Islamabad and General Zia had to accept their

demands. To counter the Shia ascendance, General Zia helped Sipah-e-Sahaba Pakistan (SSP) (Haqqani, 2006), an anti-Shia Deobandi religious organization. Coincidentally, the SSP was further supported by the Iraq-Iran war of 1980's, as the parties to the war made Pakistan a proxy theater (Fair, 2004: 104). The SSP was funded by both Iraq and Saudi Arabia (Stern, 2000: 124) making it a "cash rich organization" (Kamran, 2008: 80). The SSP, later on, gave birth to militant splinter groups, the most dangerous and notorious of them Lashkar-e-Jhangvi (LeJ), meaning army of Jhangvi, the killed founding father of SSP. Almost 30 % of terrorism in Pakistan is traced back to the SSP or its subgroups and the Shia groups like Sipah-e-Muhammad (SMP). Therefore, language and sectarian motivations explain about 70% of terrorism in Pakistan.

Third, the Soviet Invasion of Afghanistan (1979) prompted the U.S. and Saudi Arabia to invest nearly six billion dollars (Weiner, 1998) in the region to organize, train, and arm fighters against the Soviets. Thousands of Muslim fighters were brought to Afghanistan and Pakistan in the name of jihad. American and Saudi money pushed the Mullahs (Islamic religious scholars) in both Pakistan and Afghanistan to prominence⁶, established madrassas (religious schools) as sanctuaries of jihad culture, and made carrying a Kalashnikov an honor in the society. In addition, it strengthened General Zia against the Peoples Party and Shias.

Fourth, after the Afghan Jihad against Soviets ended in 1989, the U.S. left the region with thousands of battle-hardened mujahedeen, many of them in Pakistan. This

⁶ (\$6-\$8 billion were distributed to them: Bhatia and Sedara quoted in Nawaz et al., 2009: 14)

void created by the US leaving the region without demobilizing the mujahedeen according to Nawaz (2009: 10) drew Inter Services Intelligence (ISI) into action. It tried to divert mujahedeen in two directions: to create strategic depth in Afghanistan (Rashid, 1999: 118) and to support the independence struggle in the Indian-held Kashmir. With the help of the ISI, mujahedeen (Taliban) came to power in Afghanistan, and they gave refuge to Arab mujahedeen like Osama bin Laden, their erstwhile companions in jihad. After the establishment of Taliban government in Afghanistan, two important factors led mujahedeen to challenge the United States. First, the U.S. created grievances in them by ignoring mujahedeen once the Soviets withdrew. Second, the success of the mujahedeen against the Soviets—a super power—boosted their confidence. Arab mujahedeen had their own grievances especially the presence of the U.S army in Saudi Arabia. Mujahedeen, ultimately, challenged the U.S. in the form of 9/11 which brought the U.S. again to Afghanistan now not as an aide of mujahedeen but as an enemy.

Fifth, the U.S. invaded Afghanistan in October 2001 and the Government of Pakistan assisted. Pakistan as a result bought enmity of the Arab mujahedeen and the Taliban. Terrorism nowadays in NWFP, FATA and some parts of the Punjab is a direct result of Pakistan's confrontation with the Arab mujahedeen and Taliban. To further aggravate the situation, drone attacks inside Pakistani territory have created "a backlash among the tribesmen and even among the general population of Pakistan (Nawaz, 2009: 15). Once the Northern Alliance with the U.S. help formed their government in Afghanistan, India was allowed to establish four consulates and one embassy in a small country like Afghanistan. Foreign Minister of Pakistan alleged India to be sponsoring

race-based terrorism in Baluchistan⁷. These allegations against India are confirmed by C. Fair from Rand Corporation when she said: “Indian officials have told me privately that they are pumping money into Baluchistan” (2009). The weapons used against the Pakistan army in Swat operation were coming from Afghanistan and these were U.S. made⁸ which U.S says were stolen from the arms supplied to Afghan forces. The U.S. is also concerned about China building Gwadar port in Baluchistan which China is believed to use this port “to project force and undermine U.S. and regional security.”⁹

Now, I present results on time patterns of terrorism incidents in Pakistan at three levels: year, month, and day of the week. Then I compare and contrast these results with the world data from the GTD except Pakistan.

Yearly Patterns

Figure 1 mapping the outbreaks of terrorism onto other international events depicts that Pakistan has seen five peaks of terrorist violence since 1974. The first peak is located in 1987 with 60 incidents out of which 22 occurred in NWFP alone and 11 in Islamabad. The GTD shows them as incidents committed by unknown terrorists. The location and the year of the incidents strongly suggest their link with Afghan secret

⁷ <http://www.nation.com.pk/pakistan-news-newspaper-daily-english-online/print/Politics/23-Nov-2009/India-fuelling-terrorism-in-Pakistan-Qureshi> accessed on January 4, at 12:06 p.m.

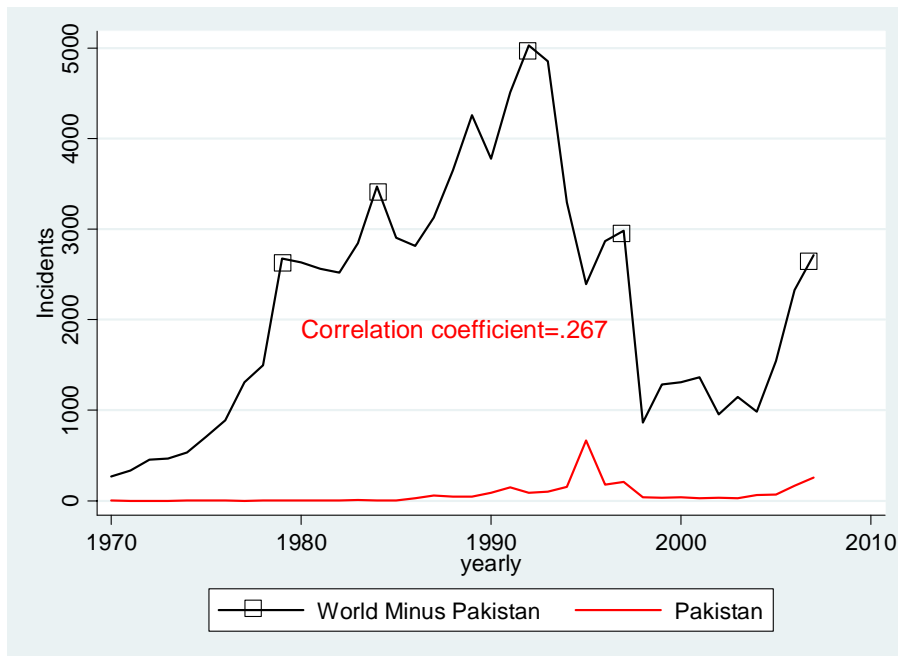
⁸ <http://www.dawn.com/wps/wcm/connect/dawn-content-library/dawn/the-newspaper/front-page/stolen-us-arms-being-used-in-swat-ispr-059> accessed on January 2, 2010 at 2:48 p.m.

⁹ <http://www.vqronline.org/articles/2007/spring/schmidle-waiting-for-worst/> accessed on 01/05/10 at 6:46 p.m.

agency or the Soviet secret agency—KGB to put pressure on Pakistan for its role in Afghan Jihad against the Soviets. The second peak is visible in 1991 with 150 incidents out of which 77 incidents occurred in Sindh followed by the Punjab with 34 incidents. This peak was the result of two streaks in terrorism in Pakistan running together: language-based and Sectarian terrorism. The third and the highest peak in figure 1 are seen at 1995 with 665 incidents out of which 630 incidents occurred in Sindh alone. It was mainly language-based terrorism confined to Karachi and nearby city Hyderabad. The fourth peak occurred in 1997 with 206 terrorist incidents. These were mainly sectarian and mostly in the Punjab. However, there were some language based incidents in Sindh as well. Presumably, because of strict government actions against sectarian organizations and language-based terrorism in Karachi, the situation improved and there was some peace time from 1998 to 2003. After six years of pause, terrorism resurfaced in 2004 with more power and revenge this time in two forms: Taliban in NWFP and the FATA and Ethnic (Race) groups in Baluchistan. Out of 256 incidents in 2007, 133 incidents occurred in NWFP and 64 in the adjacent FATA. Baluchistan also has 34 incidents.

There is a correlation of 0.267 between terrorism in Pakistan and the world, as shown in figure 2 suggesting a moderate association between the two. Cross correlogram of Pakistan and the world incidents shows a maximum correlation of 0.5 at Lag 3 indicating the lagged effect of world incidents on Pakistan after three years.

Figure 2. Terrorism in Pakistan and the World¹⁰

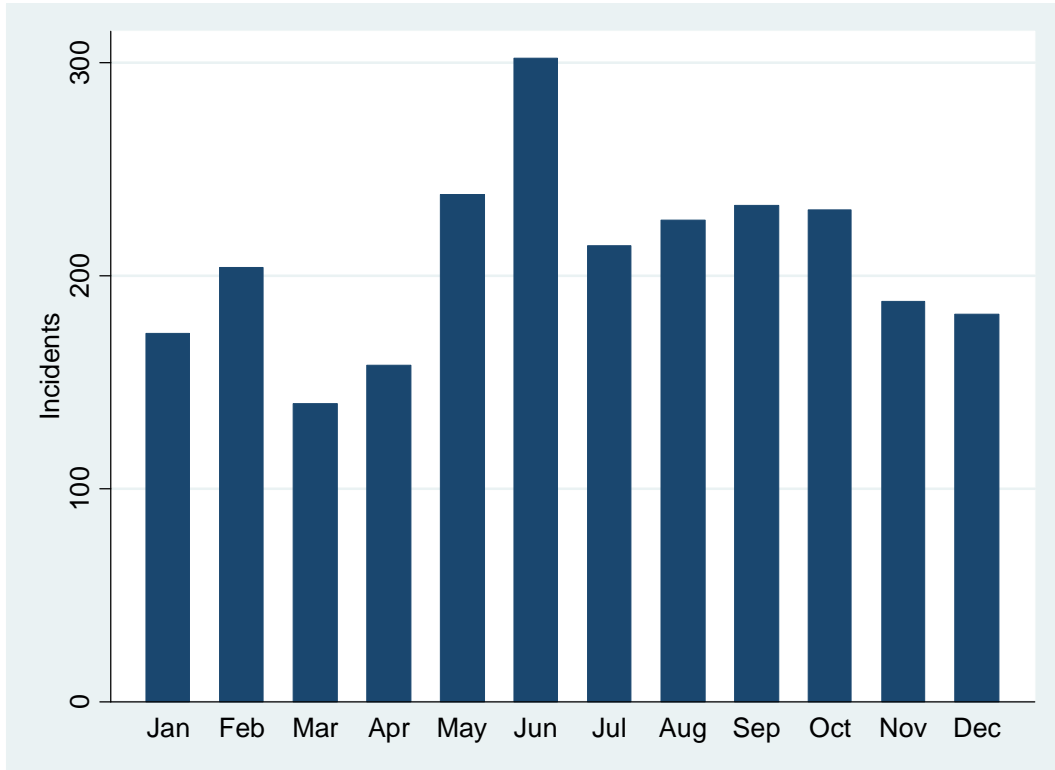


Monthly Patterns

Figure 3 giving a month wise break up of incidents over 34 years (1974-2007) demonstrates that generally the summer months have more incidents as compared to the winter months, indicating seasonality. In the case of the world, similar pattern is observed with May, March, June, July, August, and October as the months with higher number of incidents. Chi-square goodness of fit test indicates statistically significant differences in months.

¹⁰ Terrorism incidents in the world except Pakistan

Figure 3. Monthly Distribution of Terrorism Incidents in Pakistan (1974-2007)



Scholars for a long time have been interested in the twin questions of whether there is seasonality in crime and if yes why is it there—because of temperature influences on criminals or availability of more victims. Research generally supports routine activity theory—availability of more victims due to good weather and long hours—in explaining more crime in summer months (Morken and Linker, 2000; Landau and Fridman, 1993; Hird and Ruparel, 2007).

Day of the Week

As shown in table 2, Monday is the leading day of terrorism in Pakistan with 20% incidents followed by Sunday 15% and Saturday 14%. Friday remained the day with the minimum 11% of incidents. In the case of world, Monday is also the leading day of terrorism with 15% incidents. However, Saturday and Sunday are at the bottom with 13 and 12 percent incidents, respectively. Chi-square goodness of fit test indicates statistically significant differences in days of the week for Pakistan and the world.

Table 2. Incident Patterns on Day of the Week—Pakistan and the World

Day of Week	Pakistan %(N=2487)	World %(78447)
Monday	19.90	15.36
Sunday	15.36	12.92
Saturday	14.52	12.49
Wednesday	14.11	15.22
Thursday	12.67	15.06
Tuesday	12.10	14.91
Friday	11.34	14.05
Total	100	100

Terrorism patterns on days of the week could also be explained with the routine activity theory—availability of more victims on Mondays and less on holidays. Friday has the minimum incidents in the case of Pakistan and Saturday and Sunday in the case of world. One commonality between Friday, Saturday, and Sunday is the concept of holiday. Friday is generally a day of peace, rest, and prayers for Muslims and remained a weekly holiday in Pakistan for many years. Saturday and Sunday are generally the weekly holidays all around the world. Terrorist incidents are occurring less on Friday,

Saturday, and Sunday because terrorism generally is against the private citizens and the government institutions as victims, and these are available less on holidays. Reemergence of terrorism on Monday makes sense because after holidays, it is the first day of the week, more activity is expected.

Trend, Seasons, Cycles, and Autoregression

Correlogram of daily data in figure 4 shows that incidents on lag 1, lag 2, and lag 3 show a correlation of more than 0.5. Then again stronger correlation emerges after every 14 days. One explanation could be that the terrorists make their preparation, preempt, and commit acts of terrorism for some days. In the meantime, the law enforcement agencies react and the terrorists go into hideouts to come again after 14 days once the law enforcement activity slows down.

Figure 5, showing weekly data, indicates that significant strong pulses are felt at week 14 and 28, suggesting a more or less 14 week seasonal pattern. Autocorrelation of observations suggests the same boom and bust pattern of violence as discovered in daily data. The stronger return of autoregression after 14 weeks suggests a seasonal pattern of about three months confirming the findings as suggested in figure 3.

Figure 4. Autocorrelation of Daily Incidents

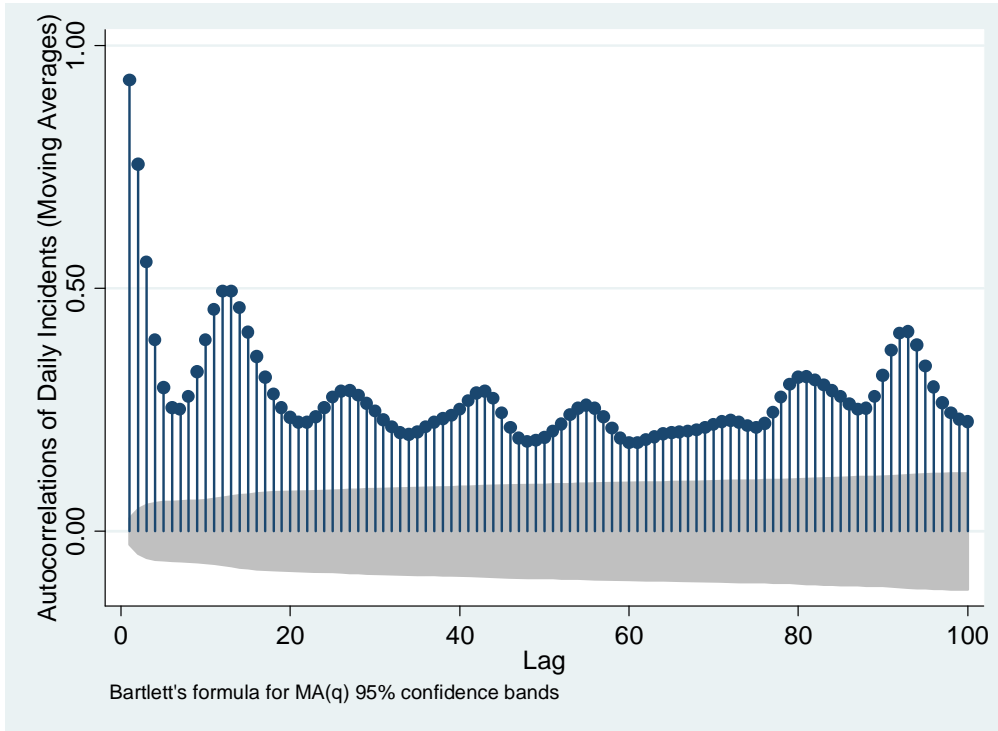


Figure 5. Autocorrelation of Weekly Incidents

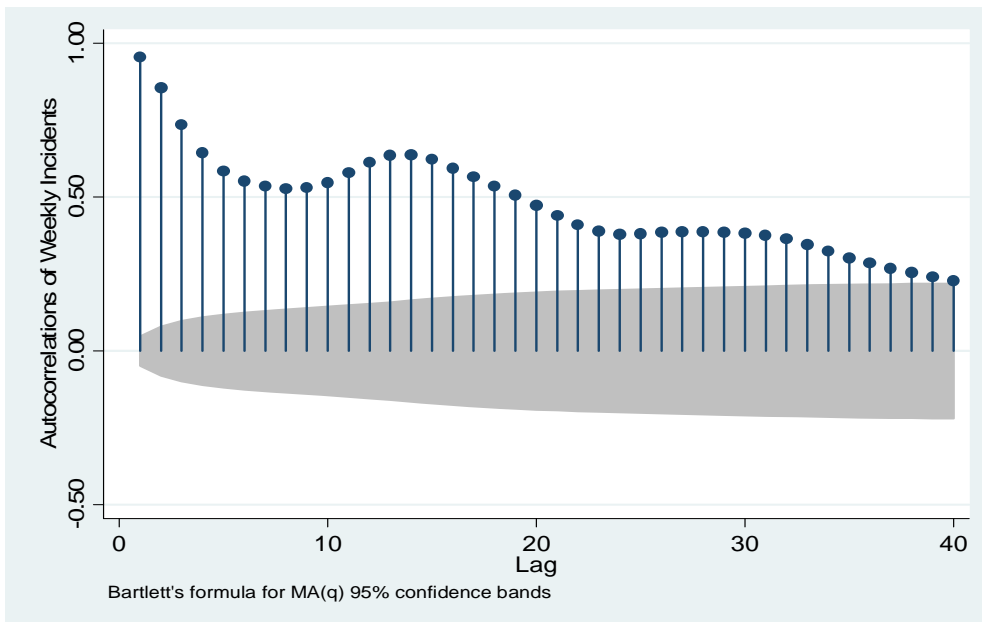


Figure 6 presents fluctuations of more than 3-month duration. Trend line over 34 years shows upward movement. Whereas polynomial of the order 11 shows 10 turning points and five cycles of varying duration. Figure 7 of number of killed and wounded shows a similar pattern in terms of rising trend but cycles show a difference—an extraordinary rise at the end of the graph indicating beginning of a very powerful cycle.

Figure 6. Trend and Cycles in the Number of Incidents

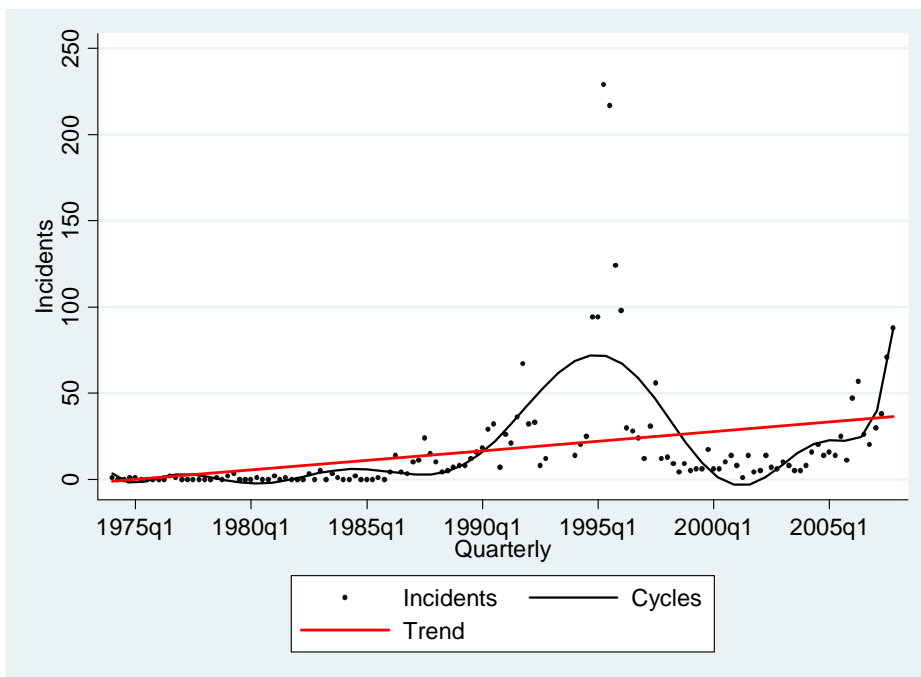
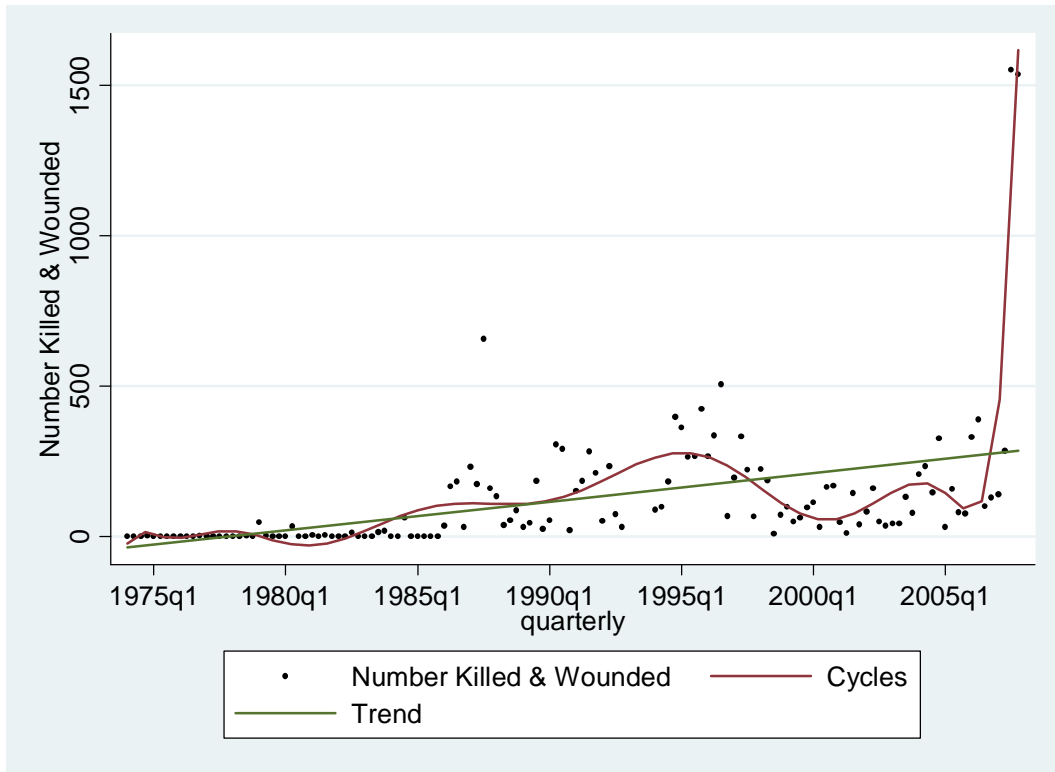


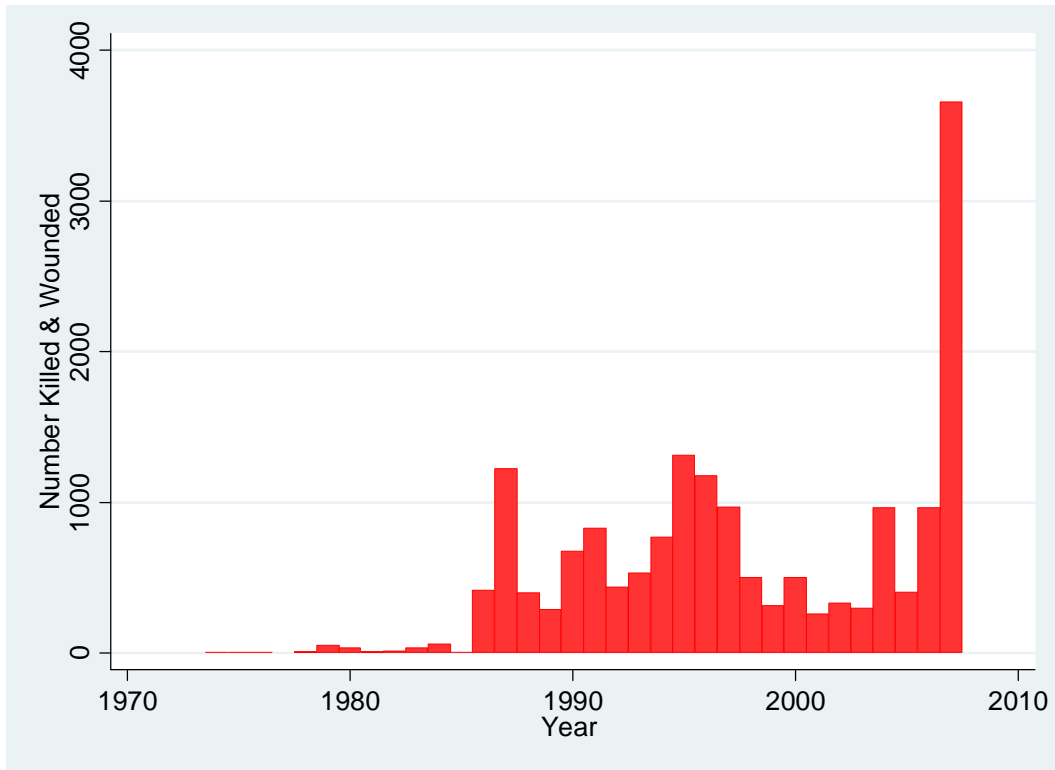
Figure 7. Trend and Cycles in Number Killed and Wounded



Temporal Patterns in Number of People Killed and Wounded

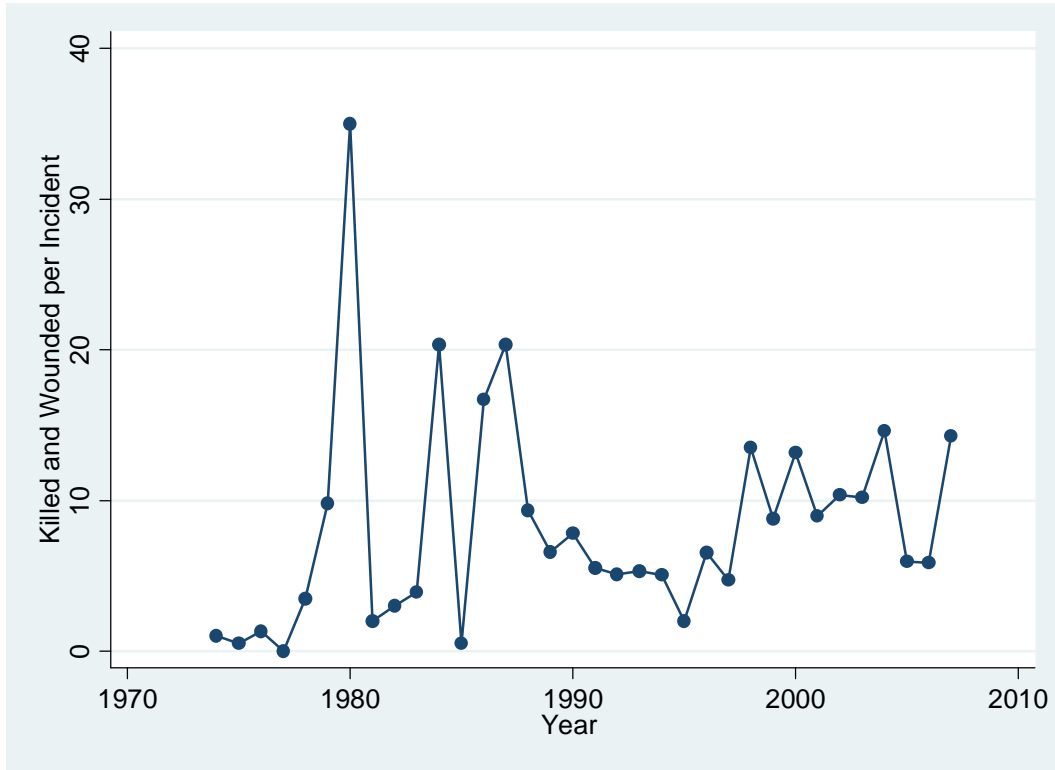
Figure 8 graphs quantum of terrorism in Pakistan in a different way—by counting the number of people killed and wounded in terrorist incidents excluding the terrorists themselves. Here the patterns of terrorism in Pakistan seem different; the graph instead of showing a peak in the middle at 1995 shows peaks at 1987, 1995, and 2007, a different pattern from the incident graph in figure 1.

Figure 8. People Killed and Wounded in Terrorism in Pakistan (1974-2007)



Depicting the distribution of severity levels—defined as the number of people killed and wounded per incident—figure 9 makes it clear that more people were killed and wounded per incident in 1980 (35), 1984 (20), and 1987(20) than in 1995 (2), the peak year in respect of the number of incidents. Reaching at two persons wounded or killed per incident in 1995, the graph has taken an upward turn and is averaging about 15 persons killed and wounded per incident in 2007.

Figure 9. People Killed and Wounded Per Incident (1974-2007)

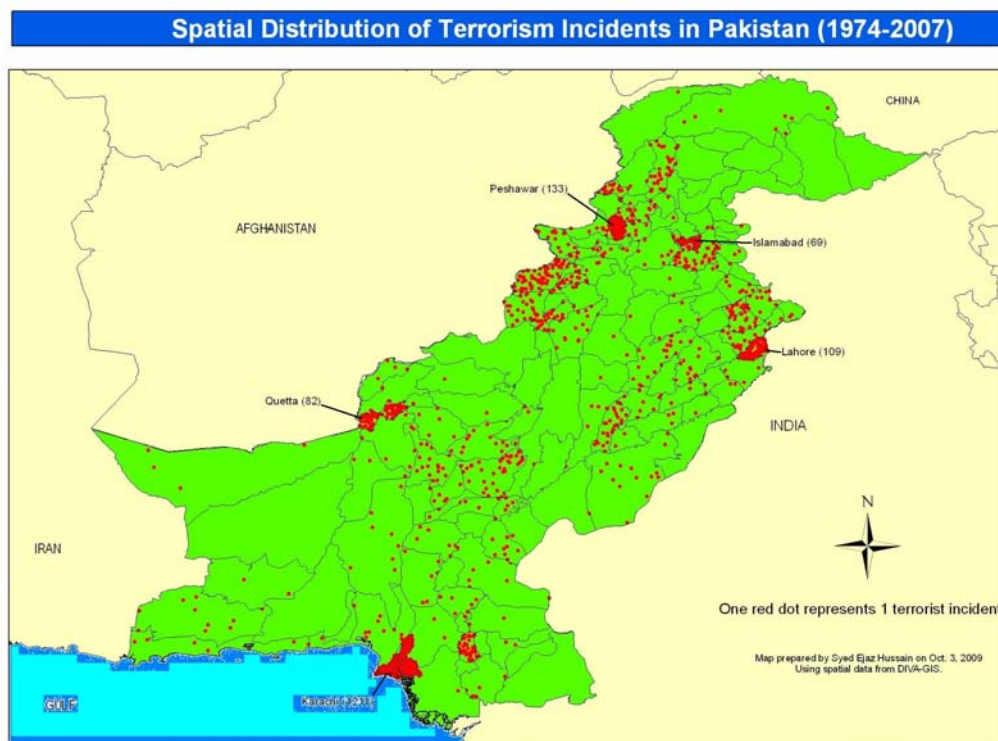


The patterns based on the analysis of number killed and wounded in terrorism (magnitude) are different from patterns based on the analysis of frequency (number of incidents). One possible explanation for this difference is the weapons' different degrees of effectiveness. This finding urges us to measure terrorism not in terms of incidents only but also in terms of number of people killed and wounded. There is a need to develop some index for measuring terrorism.

SPATIAL PATTERNS

In the following section, I display the spatial distribution of incidents at country level, province levels and at the district levels, the three important hierarchical administrative units in Pakistan.

Figure 10. Geographical Spread of Terrorism Incidents in Pakistan (1974-2007)

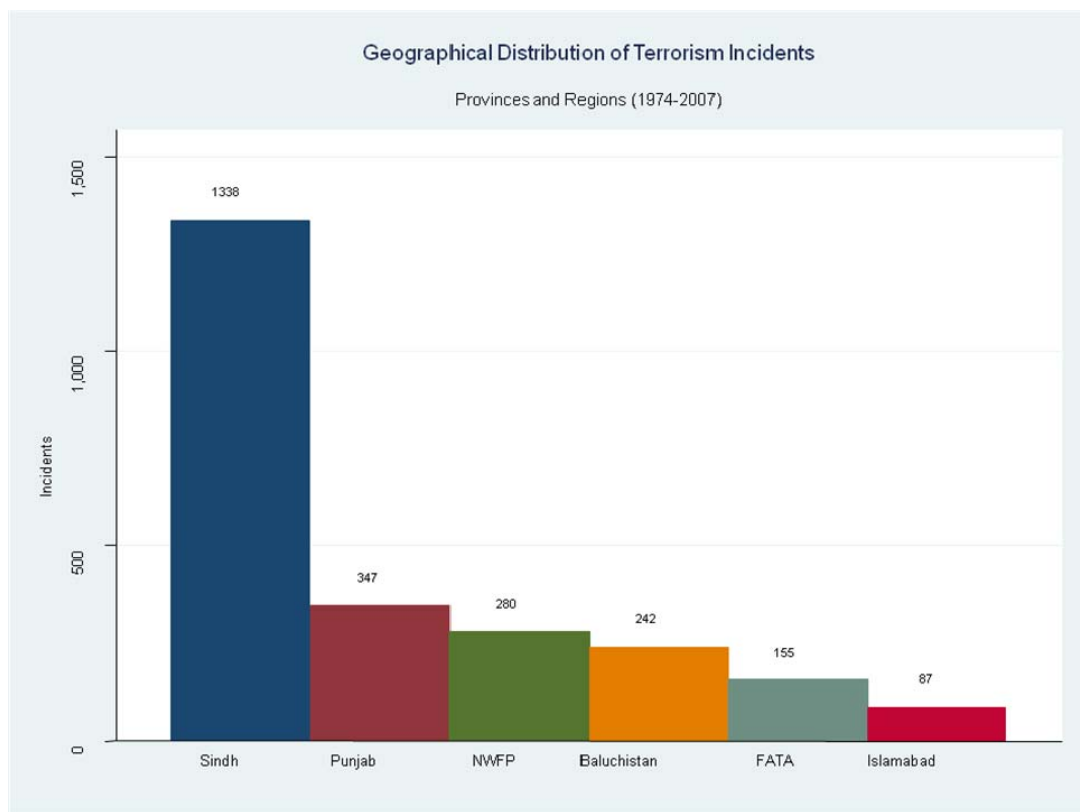


Geographical Information System (GIS) map in figure 10 presents the geographical spread of terrorism in Pakistan. Terrorism incidents mostly occurred in the four provincial Capitals—Karachi (1211, 49%), Peshawar (133, 5%), Lahore (109, 4%), and Quetta (82, 3%) and the country capital Islamabad (69, 2.7%). Some of the rural

districts also attracted more than twenty terrorism incidents as shown by the large number of dots at some places. In addition to the capitals, dots concentrate in the FATA, Swat, Southern Punjab and the central Baluchistan.

To show the geographical distribution of terrorism in different provinces and federally administered regions of Pakistan, I made bar graphs as presented in figure 11.

Figure 11. Spatial Distribution—Provinces and Districts (1974-2007)

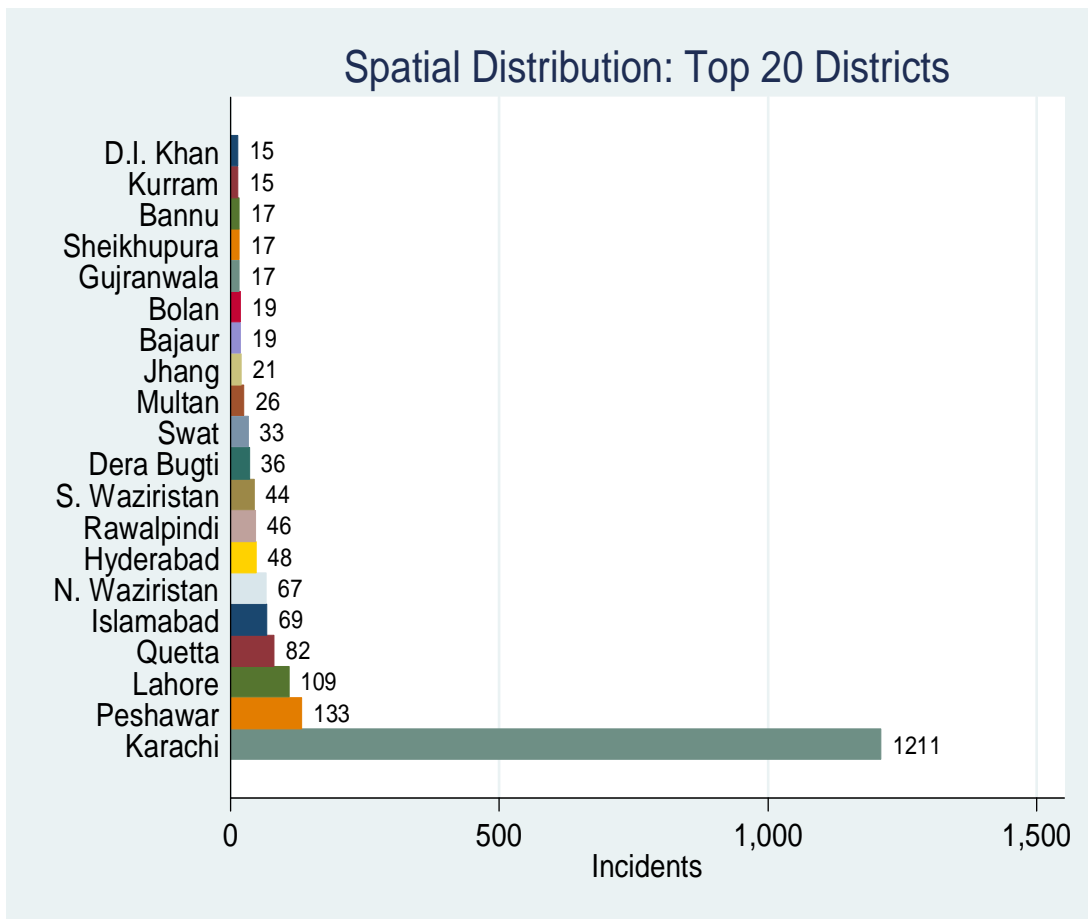


The bars clearly show that the province of Sindh has the maximum number of incidents (1338, 54%), followed by Punjab (347, 14%), NWFP (280, 11%), Baluchistan (242,

10%), and FATA (155, 6%). Islamabad Capital Territory, Northern Areas, and Kashmir combined as Islamabad had the minimum incidents (87, 4%).

To look at the spatial distribution of incidents below country and province levels, I have shown the incidents at district levels in figure 12. Top 20 districts are shown with Karachi at the top with 1211 incidents—49% of the total incidents in the country and 90 % incidents in the province of Sindh. Karachi is followed by Peshawar, Lahore, Quetta, and Islamabad—all are capitals. Some other peripheral districts which also attracted

Figure 12. Spatial Distribution—Top 20 Districts (1974-2007)



higher number of incidents included North Waziristan, Hyderabad, Rawalpindi, South Waziristan, Dera Bugti, Swat, Multan, Jhang, Bajaur, Bolan, Gujranwala, Sheikhpura, Bannu, Kurram, and D.I. Khan listed in order of their frequency.

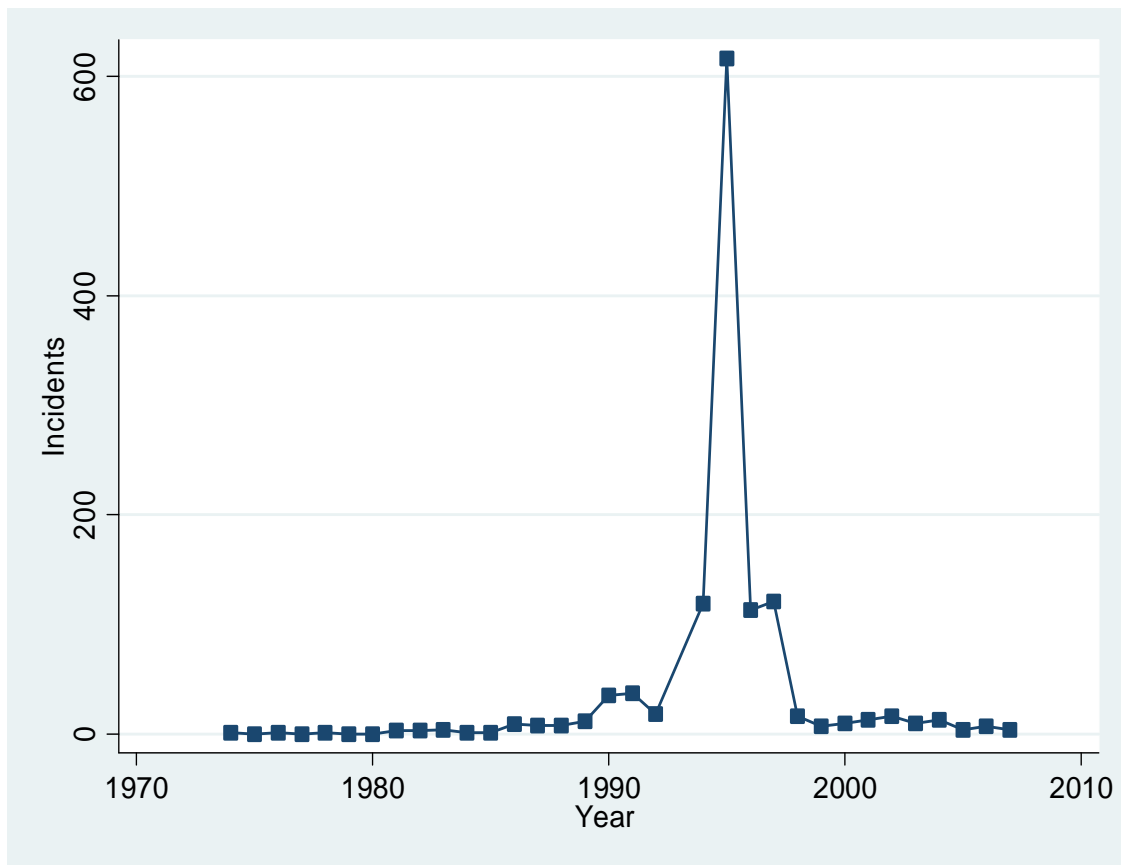
Spatial patterns show that provincial capitals and some other districts attracted more terrorism than the others. Provincial capitals probably attracted more terrorism because they were the power base of the government. Terrorism there made it more didactic, theatrical, and symbolic. Additional factor which may have increased terrorism in them are their bigger sizes allowing for availability of more targets, more media coverage, and more hiding places available. Other districts excluding capitals which have more terrorism in them are the districts which have some source of conflict in them. For example, the districts of Dera Bugti, Kohlu, and Sibi are where the gas fields are in Baluchistan and these are one source of grievance of the locals against the federal government. In the same way, the districts of Jhang, Faisalabad, Multan, and Bahawalpur, attracted comparatively a larger number of terrorist incidents in them because these districts were source of sectarian conflict between the Sunnis (Deobandis) and Shias. Districts of Swat, D.I. Khan, and agencies of North and South Waziristan, Kurram are having more terrorism because they have some local conflict in them.

The Evolution of Terrorism in Karachi (1974-2007)

To further investigate the highest number of incidents in Karachi—49 % of the national total—I made a temporal distribution of the incidents to study their evolution over time. Figure 13 shows that Karachi started to have perceptible levels of terrorism in

1990 with a peak in 1995 with 616 incidents. The percentage of terrorism in Karachi in the national total is far higher than what is due to Karachi in terms of its population 18 mil. (10%) and area 3,530 square km (0.44%). Factors which may explain frequency of terrorism in Karachi include but are not limited to: being capital of the Sindh province,

Figure 13. The Evolution of Terrorism in Karachi (1974-2007)



source of the conflict, its demographic composition, and being a metropolitan. First, because it is capital of the province, terrorism here has more symbolic and theatrical value. Second, Karachi is unique; it is not only a capital but the sole source of conflict in the province of Sindh. The bases of this conflict are its socioeconomic conditions and

demographic changes. Karachi had a population of 4, 00,000 in 1947 which swelled up to 18, 00, 00,000 in 2009—an increase of 450 times¹¹. This exceptional increase in population was because of many reasons: Karachi became the first national capital; the only seaport; the first international airport; major industrial city; financial center; and house of millions of Urdu-speaking migrants from India, major chunk of Afghan refugees, Pathans from NWFP, and Punjabis from Punjab.

Karachi's queer demographics serve as a perennial source of conflict here. Although, it is capital of Sindh province but the Sindhis are only 7.22% of the total population. Ninety three percent of the population comprises of immigrants: Urdu speaking (48.52%), Punjabi (13.94%), Pashto (11.42%), Balochi (4.34%), Saraiki (2.11%) and others (12.44%). Karachi has become the largest Pashtun city in the country; there are more Baluchis in Karachi alone than in Baluchistan and it is the sixth largest Punjabi town (Kukreja, 2003: 152). Now the politics of Sindh revolves around ethnic conflicts: Sindhi v. Muhajirs, Muhajirs v. Punjabis, Muhajirs v. Muhajirs, and Muhajirs v. Pathan—creating a situation of everybody against everybody else. Sectarian violence in the city has further aggravated the situation creating a new line of division as many of the MQM are Shias and most of the Pathans are Deobandi.

It is not just the linguistic composition of the city but the prevalence of youth, which also mattered. In 1987, the year in which violence in Karachi actually started,

¹¹ It is instructive to look at Karachi's population graph presented in <http://en.wikipedia.org/wiki/Kharak> accessed on 01/07/2010 at 4:54

almost 36% of Karachi's population was between the ages of 14 and 30. 71% of them were literate, as compared to the overall Karachi literacy figure of 55% and the overall Pakistan figure of 26.17%. Twenty two percent of its members were graduates.

No wonder the infrastructure—housing, roads, transport—could not keep pace with the fast growth of the population. Originally housing conflicts turned into ethnic rivalries, and transport problem provided the immediate context. The first ethnic violence was between the Urdu-speaking Muhajirs and Pathans in 1987 on killing of a Muhajir female college student by a Pathan passenger van driver in an accident. This clash was aggravated by the easy availability of weapons at unusually cheap prices. Between 1986 and 1989, the prices of guns went down by 40 to 50% in Karachi. A pistol could easily be bought at Pakistani Rupees 3000 (US \$40 now) and a Kalashnikov for 16,000 Pakistani Rupees (US \$188). The MQM with the active support of the government split in 1992 (Fair, 2004: 112). Violence within the two MQM factions was most intense during 1993 and 1994.

THE DISTRIBUTION OF TARGET TYPES

Private Citizens, properties, and businesses remained at the top with 844 (39%) incidents against them. Infrastructure and facilities remained the second important target with 315 (13%) incidents. Police and military also remained under attack in a large number of cases—251 (10%) against police and 151 (6%) against military and paramilitary forces. Sectarian targets attracted 221 (8%) incidents. Civil administration was attacked in 147 (6%) incidents, foreigners in 131 (5%) incidents, civil society

institutions in 32 (1%), educational institutions 22 (0.9%), minorities in 19 (0.8%) and music shops and barber shops in 18 (0.8%) cases. Private Citizens, property, and businesses remained at the top as victims probably because of three reasons. First, they are a soft target, undefended, and have no deterrence. Second, they are available in large numbers; all groups targeted them. Third, once attacked, they are more likely to compel the government to yield to terrorist demands. Data show that police are the target in almost 10% incidents in Pakistan and the world both. This pattern is easy to understand because terrorism whether it is against the government or some other entity, police must come in as the first line of response. Therefore, they are targeted necessarily.

Figure 14. The Distribution of Target

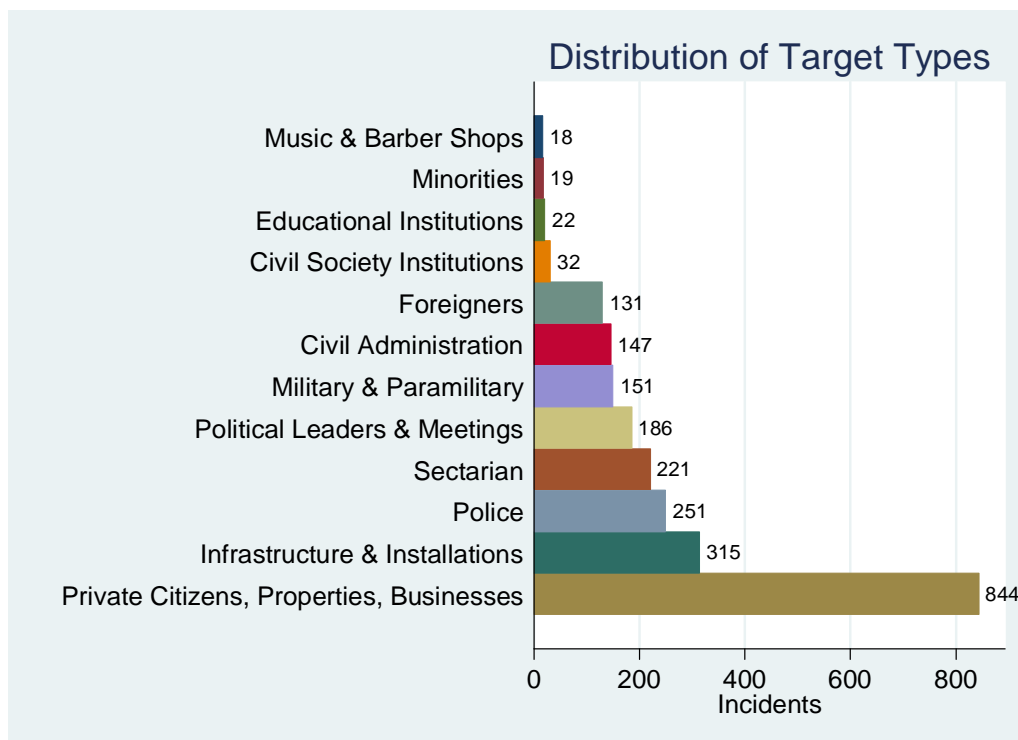
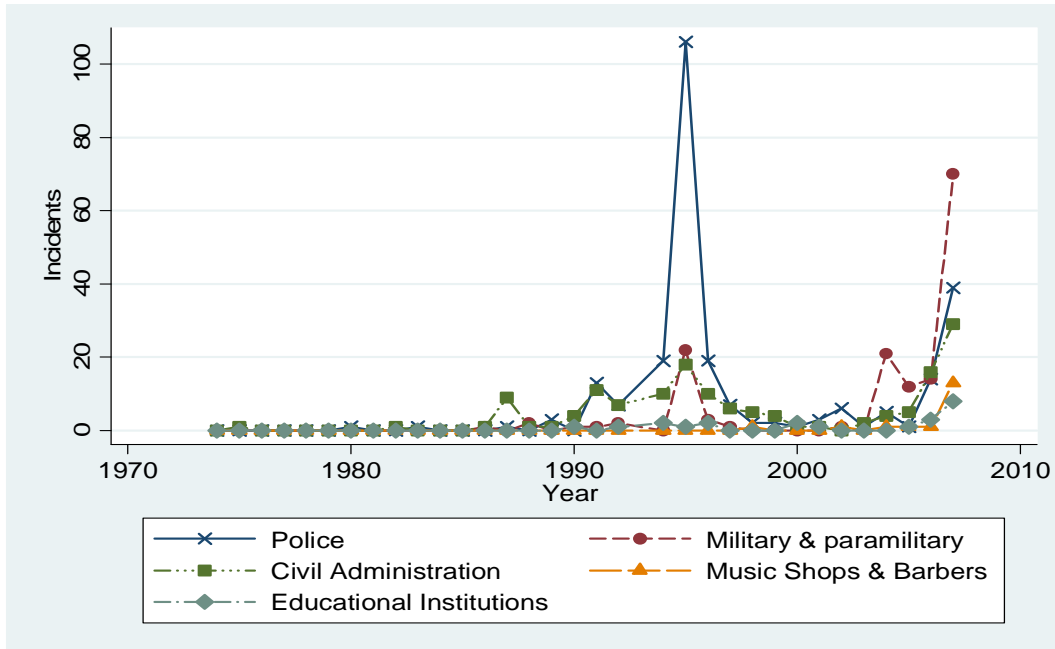


Figure 15. Evolution of Target Type-Current Trends for Select Targets



Although the language-based organization attacked police in the 1990s, after 9/11, the trend generally is to target government agencies like police, military, schools, and barber and music shops as shown in figure 14. Military is at the top followed by police, civil administration, educational institutions and music and barber shops. Targeting of military and paramilitary, police and the civil administration is interpreted as reaction against the government policies or a deliberate attempt by the vested interests to destabilize the state of Pakistan. Educational institutions (girls' schools) are targeted because according to Taliban, their education is un-Islamic. In the same way, Taliban target music and barbers' shops because they consider listening music and shaving beards as against Islam.

THE DISTRIBUTION OF WEAPON TYPES

Figure 16. Distribution of Weapon Types

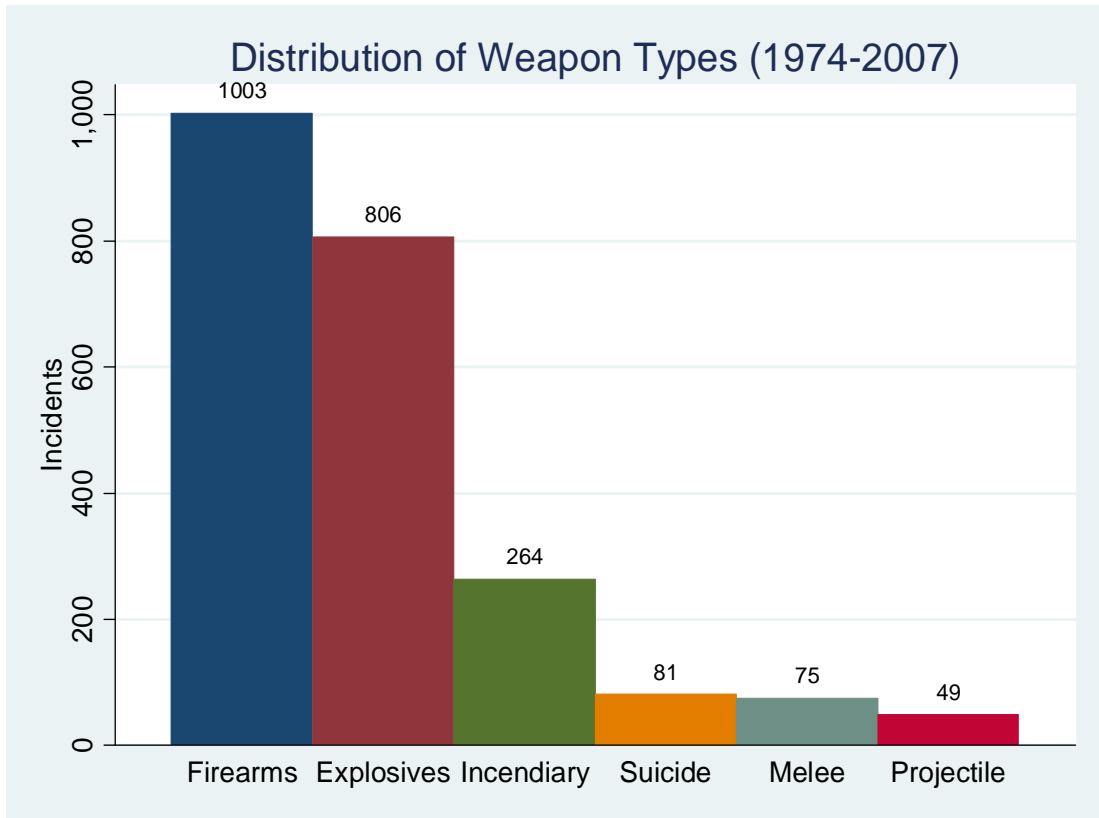


Figure 16 indicates that firearms were the main weapon in 1003 cases—near 40% of the terrorist incidents, very closely followed by explosives in 806 (32%) incidents. Incendiary was used in 264 (11%) incidents, suicide attacks in 81 (3%) cases, melee in 75 (3%), and projectiles in 49 (2%). Firearms remained on the top as weapons because these were easily available, less expensive, and did not need much of training to be fired. Additional reason was the MQM’s liking for firearms, as asserted by Fair (2004: 112). She claims that the MQM’s use of rocket launchers was inaccurate and ineffective.

Therefore, they did what they could do competently—acts of assassinations, terror, and street violence—and pistol was their favorite weapon.

Another dimension of weapon type analysis could be the study of casualties per type of weapon. Such an analysis is presented in table 3. Suicide attacks killed and wounded 42 people per attack, explosives 9.4 per incident, firearms 4.3 per incident and projectiles 7.3.

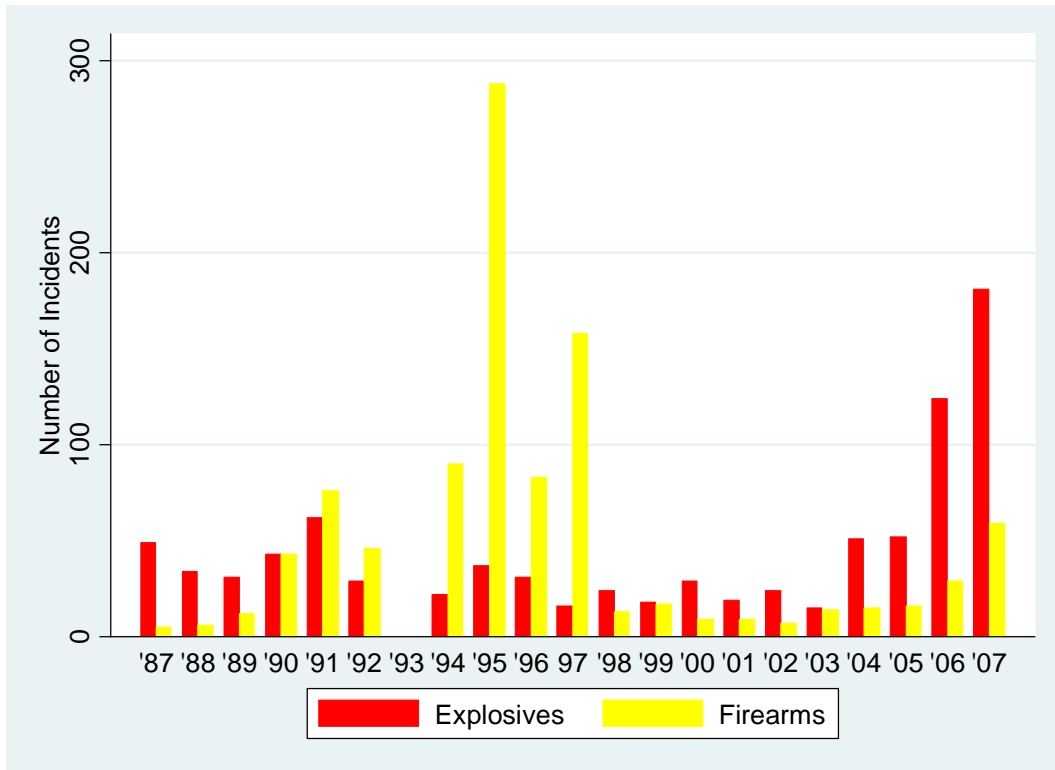
Table 3. Killed and Wounded per Weapon Type (1974-2007)

Weapon Type	Killed and Wounded Total	Killed and Wounded Per Incident
Firearms	4354	4.3
Explosives	7543	9.4
Suicide Attack	3361	42
Projectiles	359	7.3

Figure 17 presenting the use of firearms and explosives is very revealing. Starting from 1987 until 1990, explosives dominated the terrorism scene in Pakistan. First time in 1991, firearms started to dominate and for seven years until 1997, firearms kept on dominating. Then from 1998 onward until 2007, explosives are the weapon of choice with the terrorists. It is interesting to note that when explosives are dominating the scene, they do it for quite some time, so do the firearms. Explosives are comparatively difficult to acquire and use and their use also need meticulous planning. Therefore, my explanation of the observed pattern supported by the data is that when explosives are

used, a foreign hand behind the terrorism in generally there, for example pre-1991 years, and post-1997. Secondly, explosives are more likely to be used directly against the government targets, or to destabilize the government, otherwise.

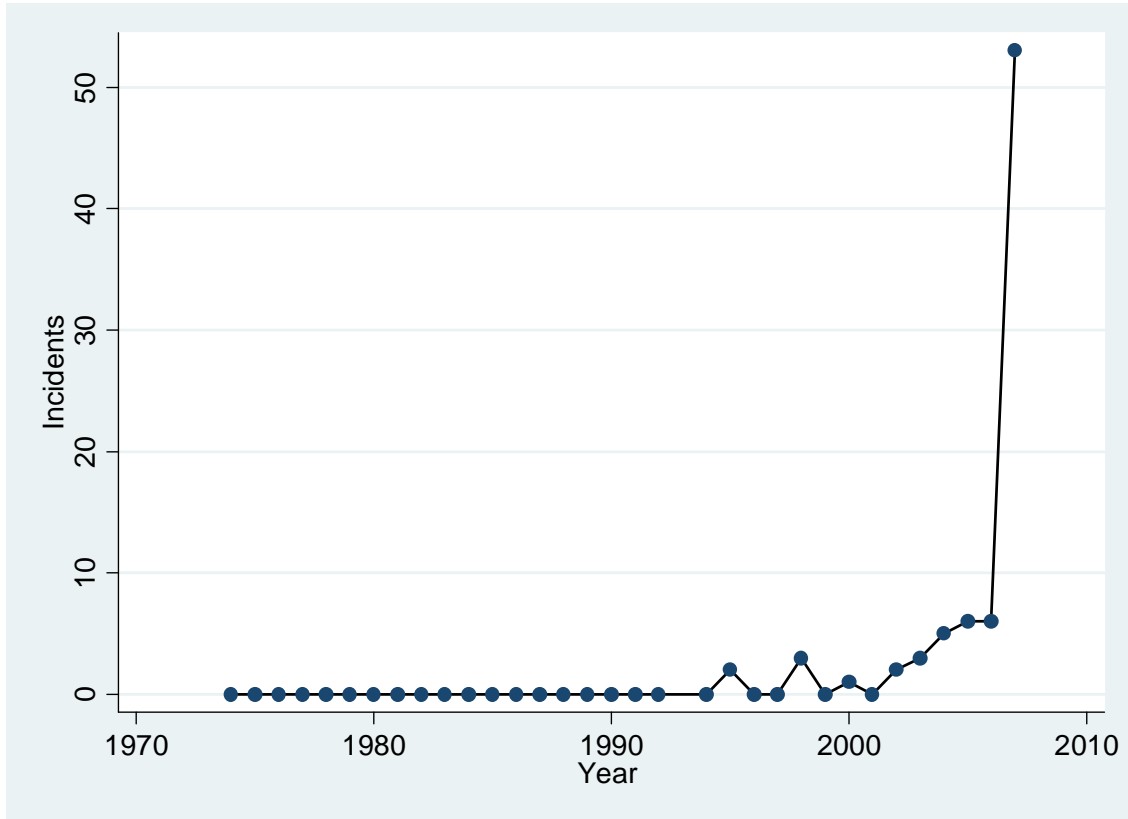
Figure 17. Evolution of Firearms and Explosives (1987-2007)



As we learned that suicide attack is the most damaging type of weapon used by the terrorists and its frequency is increasing day by day, its in-depth investigation is necessary. Therefore, I present the suicide attacks separately. Figure 18 shows that suicide attacks in Pakistan started in 1995 but were not so frequent until 2001. From 2001 onward the graph took a sharp upward turn and 56 suicide attacks resulted just in 2007

alone. The seriousness of the issue can be gauged from the fact that worldwide from 1980-2001, 188 suicide attacks were reported (Pape, 2003: 343) but in Pakistan, in just

Figure 18. Trends in Suicide Attacks



one year, 56 suicide attacks took place. Suicide terrorism follows a strategic logic (Pape, 2003: 344). The strategic goal according to him is “to compel modern democracies to withdraw military forces from territory that the terrorists consider to be their homeland” (Pape, 2005: 4). Data here seem to reject Pape’s hypothesis. In Pakistan, there is no foreign occupation. Suicide attacks took place as a reaction against the government of Pakistan’s operation in Islamabad Red Mosque, in July 2007. During 2007, until June, there were 8 attacks. And in the next six months of 2007, there were 48 attacks, mostly in

the second half of July. It clearly shows a reaction of the government's policy. The data here show that suicide attacks are used against hard targets, or where a lot of damage was required. In Collins' opinion, growth of suicide attacks, using explosives, might be explained by the demonstration of their greater effectiveness, achieved through the *delivery system*. According to him, the humans operating covertly have the highest reliability rate of delivering the weapon close to its target. (R. Collins, personal communication, November 18, 2009). While explaining this sharp rise, Hassan (2004: 42) wrote "foreign jihadis brought the technique; Arab clerics escaping from Afghanistan preached its virtues; Pakistani merchants and smugglers provided funding; and local zealots supplied bombers."

THE DISTRIBUTION OF TERRORIST GROUPS

Two hundred and six (8%) terrorist attacks are traced back to Ethnic (Language) groups, 121(5%) to sectarian groups, 103 (4%) to militant Muslims, 47 (2%) to Ethnic (Race), 21 (1%) to foreigners, 26 (1%) to political terrorists, and 13 (0.5%) to al-Qaeda as shown in figure 19. A major portion of 1878 (75% of the total) incidents is attributed to unknown terrorists. Although the GTD shows them as untraced but majority of these incidents have been traced out and linked to language-based and sectarian terrorists.

Figure 19. Distribution of Terrorist Groups (1974-2007)

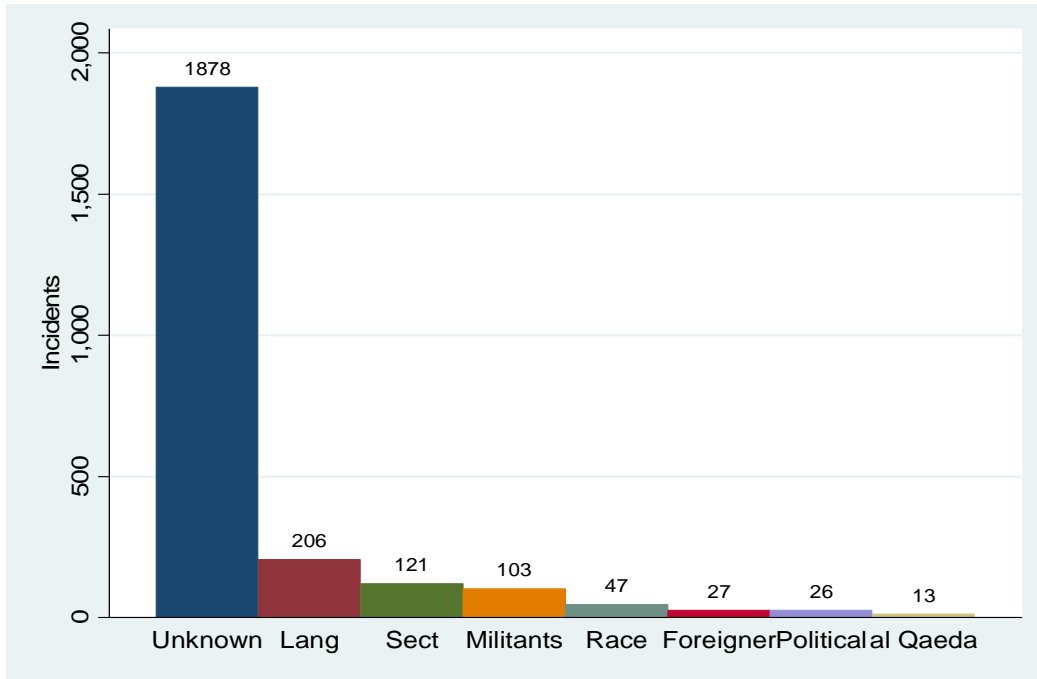


Table 4 shows that number killed by al Qaeda per incident are 10.15, against 2.25 overall. Number of wounded per incident attributed to al Qaeda are 25.27, against the overall mean of 4.47. It shows that al Qaeda incidents are, comparatively, more severe.

Table 4. Severity of Al-Qaeda Incidents

Variable	Observations	Mean	Std. Dev.	Min	Max
Number Killed	13	10.15385	9.007831	0	24
Number Wounded	11	25.27273	24.02537	2	70

TERRORISM IN PAKISTAN PRE AND POST THE U.S.-LED INVASIONS OF AFGHANISTAN

The study compares and contrasts the two periods by using descriptive statistics, GIS map, and bar graphs. To make comparisons valid, I used data immediately preceding and following the Afghan invasion and immediately preceding and following the Iraq invasion for equal number of days. The U.S. invaded Afghanistan on October 7, 2001 and including the attack day, it makes 2277 days to December 31, 2007. To count 2277 days backward it takes us to July 14, 1995. Whereas the U.S. invaded Iraq on March 20, 2003 and it counts 1748 days from the invasion day to December 31, 2007. To count 1748 days backward, I took June 6, 1998 as the starting day.

Results of data analysis on the change in total number of incidents, severity levels, change in spatial distribution of terrorism, change in weapon types, target types, and weapon types are given in table 5. Summary statistics show that the frequency of incidents went down but their severity levels went up.

Table 5. Comparison of Pre and post Statistics

	Before	After
Incidents	827	619
Killed	1410	2277
Killed per Incident	1.92	3.68
Wounded	2675	4840
Wounded per Incident	3.70	7.82

Figure 20 and figure 21 show the spatial distribution of terrorist incidents in Pakistan pre and post U.S.-led invasion of Afghanistan. Figure 20 makes it vivid that terrorist incidents in Pakistan before the invasion were concentrated mostly in Punjab and Sindh—the two eastern provinces of Pakistan bordering India. Figure 21 showing the distribution of incidents after the Afghan invasion indicate a geographical shift from the eastern regions of Pakistan to western regions like Peshawar, Swat, Quetta, FATA, and Bolan and Dera Bugti areas of Baluchistan.

Figure 20. Spatial Distribution before U.S.-led Invasion of Afghanistan

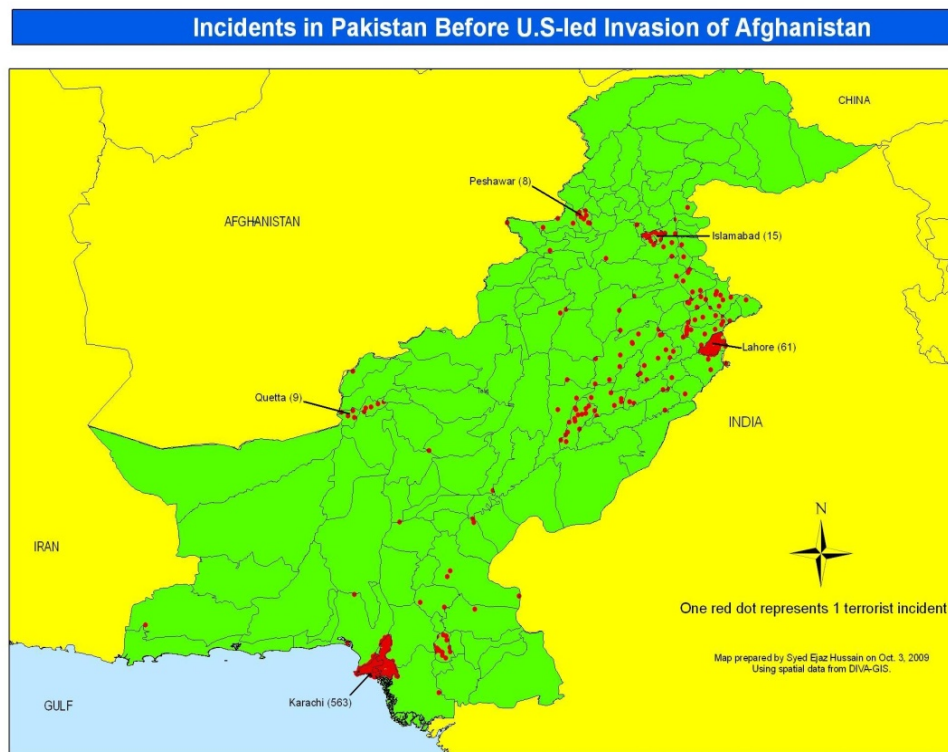


Figure 21. Spatial Distribution after U.S.-led Invasion of Afghanistan

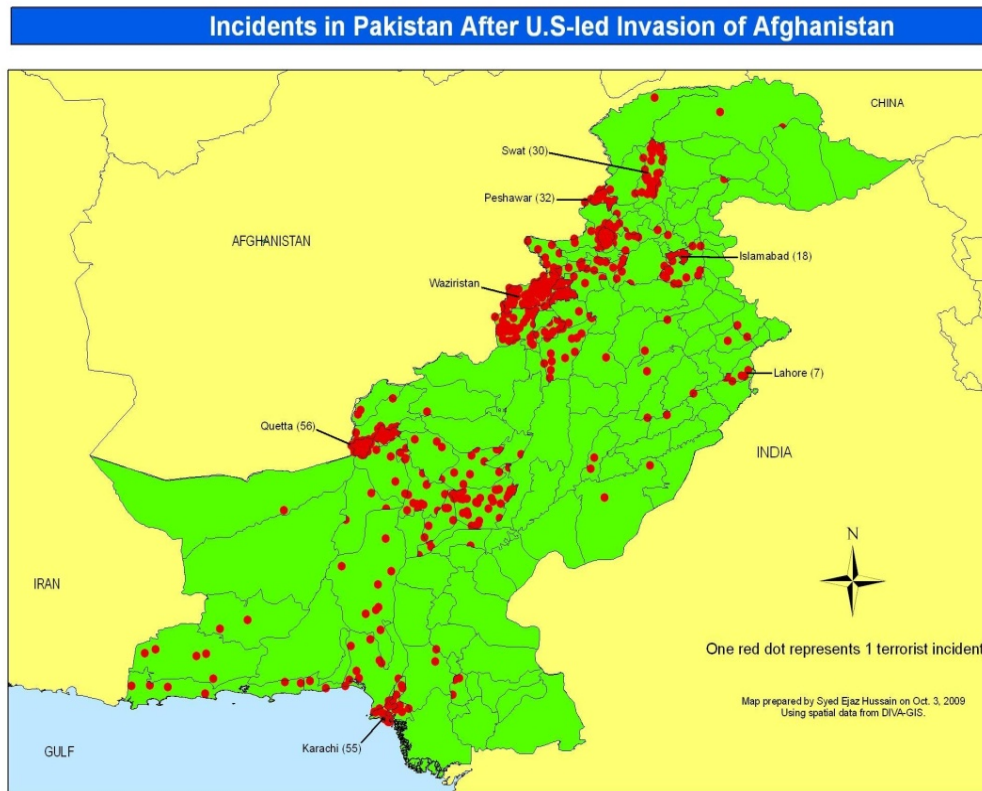


Table 6 portrays the changes in distribution of terrorism incidents in terms of number of incidents pre and post the U.S.-led invasion of Afghanistan. Incidents in terms of percentages increased in NWFP, Baluchistan, FATA and incidents significantly decreased in Punjab and Sindh. Islamabad has attracted almost the same percentage of incidents.

Table 6. Pre and post Percentages of Incidents in Provinces and Regions

Incidents	Before %	After %
Punjab	22.84	6.86
Sindh	71.32	10.20
NWFP	1.34	24.92
Baluchistan	1.70	31.44
FATA	0.49	23.08
Islamabad	2.31	3.51
Total	100.00	100.00

Table 7 below presents the percent changes in the incidents attributed to them and indicates that Muslim Militants, and Ethnic (Race) increased their incidents but language-based ethnic incidents, and sectarian decreased substantially from 5.19 % to 0.97%.

Table 7. Percent Changes in Terrorist Types

Terrorist Type	Before%	After%
Ethnic (Language)	5.19	0.97
Sectarian	8.33	3.23
Muslim Militants	0.97	12.44
Ethnic (Race)	0.12	7.43
Al-Qaeda	0.00	2.10

Table 8 shows that military and paramilitary forces, infrastructure and facilities and civil administration attracted a higher percentage of incidents after the U.S.-led invasion of Afghanistan.

Table 8. Percent Changes in Target Types

Target Type	Before%	After%
Private Citizens and Businesses and Property	31.28	20.36
Infrastructure and facilities	11.11	15.51
Police	10.02	10.66
Religious Figures/Institutions	12.20	7.43
Military and paramilitary	1.57	19.06
Civil Administration	5.07	9.21
Educational Institutions	0.72	1.94
Music shops, Barber shops	0.12	2.75

Table 9. Percent Change in Weapon Types

Weapon Type	Before%	After%
Firearms	49.03	22.94
Explosives/Bombs/Dynamite	16.06	57.67
Incendiary	20.65	0.65
Suicide Attack	0.72	12.12
Projectile (rockets, mortars, RPG)	1.69	2.75

Table 9 makes it clear that explosives and suicide attacks have increased substantially from 16 % to 58%, and 1 % to 12% respectively. The use of firearms has decreased from 49% to 23% and incendiary from 21% to 1%.

TERRORISM IN PAKISTAN PRE AND POST THE U.S INVASION OF IRAQ

Table 10 indicates that terrorism incidents increased from 162 to 573 and people killed and wounded from 427 to 2160 and from 1208 to 4543, respectively. The number killed per incident and the number wounded per incident increased from 2.64 to 3.77 and 7.46 to 7.93.

Table 10. Comparison of Pre and post Statistics

	Before	After
Incidents	162	573
Killed	427	2160
Killed per Incident	2.64	3.77
Wounded	1208	4543
Wounded per Incident	7.46	7.93

Incidents in Punjab and Sindh decreased from 36% of the total to 6% and from 42 % to 7%, respectively. Incidents in NWFP increased from 3 % to 26%, Baluchistan from 8 to 33%, and FATA from 3 to 24%. As shown in Table 11, incidents in Islamabad also

Table 11. Pre and post Percentages of Incidents in Provinces and Regions

Region	Before	After
Punjab	35.63	5.98
Sindh	42.50	6.70
NWFP	3.13	26.45
Baluchistan	7.50	33.33
FATA	3.13	24.28
Islamabad	8.13	3.26
Total	100.00	100.00

decreased from 8% to 3%. Table 12 presents that Muslim militants and Ethnic (Race) increased their share of incidents while Ethnic (Language) and sectarian terrorists decreased their percentage share in the total incidents.

Table 12. Change in Terrorist Group Types

Terrorist Type	Before	After
Ethnic (Language)	4.29	0.35
Sectarian	20.25	2.27
Muslim Militants	4.91	12.06
Ethnic (Race)	0	8.04
Al Qa'eda	1.23	1.92

Table 13 while showing changes in target types tells us that terrorism against infrastructure increased by 7%, against military 20%, civil administration 4% but decreased against minorities by roughly 2%.

Table 13. Change in Terrorist Target Types

Target Type	Before	After
Private Citizens and Businesses and Property	27.61	20.62
Infrastructure and facilities	9.20	16.08
Police	8.52	10.49
Religious Figures/Institutions	20.25	6.82
Military and paramilitary	0.61	20.45
Civil Administration	6.13	9.79
Foreigners	12.88	3.32
Educational Institutions	1.84	2.10
Minorities	3.68	0.87
Music shops, Barber shops	0.61	2.80

Table 14. Change in Weapon Types

Weapon Type	Before%	After%
Firearms	36.42	21.68
Explosives/Bombs/Dynamite	51.85	58.57
Suicide Attack	2.47	12.76
Projectile (rockets, mortars, RPG)	7.41	2.27

Changes in weapon types as brought out by table 14 indicates that use of firearms decreased 14%, projectiles by 5% while suicide attacks increased by 10%, and explosives by 7%.

CONCLUSION

The study aimed at understanding the dynamics of terrorism in Pakistan through analyzing temporal and spatial patterns in terrorism incidents. In addition, it analyzed the victim types, weapon types and terrorist group types to understand patterns in them. Results from this study highlight the importance of conflicts, communism, capitalism, cycles, capitals, citizens and Kalashnikov, in understanding the evolution of terrorism in Pakistan. The factors listed above provide us the gist of the spatial and temporal patterns of frequency and magnitude of terrorism, and patterns in victim, weapon, and terrorist types. While giving the gist, we can say that terrorism in Pakistan is an extreme form of reaction to inappropriately handled political and economic grievances turned into ethnic and religious dissensions. Internal and external vested interests provided the support, which aggravated the situation. In addition, the analysis of data shows that the the U.S.-led invasions of Afghanistan and Iraq have brought some profound changes in terrorism patterns in Pakistan. Frequency of incidents has increased, more people are dying, weapons have changed from firearms to explosives, especially noticeable is the increase in suicide attacks, and the government institutions especially army is the target. Terrorism

has moved from east to west of the country with substantial increases in NWFP, Baluchistan and FATA. Sectarian and language-based incidents have decreased but terrorism committed by Ethnic (race) and Muslim militants have increased. The striking shift in the geographic concentration of terrorism post-USA invasion of Afghanistan is prima facie evidence of the dynamic nature of terrorism. Terrorism has moved from east to west because now area of conflict has shifted to the west of the country. The second explanation might be sponsorship of the post 9/11 terrorism in Pakistan which allegedly comes from India, the U.S. or Iran and they are sitting in Afghanistan, on the western border of Pakistan. Findings have theory, practice, and policy related implications.

Ethnic, political and religious conflicts, like many states, are endemic to Pakistan, sometimes real, sometimes perceived and sometimes concocted, even. Despite these conflicts, life in Pakistan went as usual, unless the government agencies turned these natural conflicts into well-defined divisions and the outside state actors used these divisions to advance their geostrategic interests in the region. All of these conflicts have resulted from some genuine socioeconomic grievance, for example, lack of civic amenities, unfair distribution of resources among provinces, issues of provincial autonomy and changes in demographics. Conflagration caused by inappropriately handling these conflicts became the essence of terrorism in Pakistan. Ultimately, the political conflicts turned into sectarian, ethno-linguistic, ethno-secessionist and religious motives for terrorism. Conflict not only explains varied motives for terrorism but spatial distribution of terrorism at some places too. Places with the source of conflict in them, for

example, the central districts of Baluchistan, the southern Punjab, Waziristan and Karachi, attracted more terrorism as compared with the others.

Communism and capitalism are the two essential part of the story of terrorism in Pakistan; no account of terrorism is complete without a discussion of the two. Since the earlier days of Pakistan's establishment and after 1979, geostrategic politics of the region revolves around battles between communism and capitalistic forms of governance. Pakistan was affected by communism in two ways. First, a sponsored zeal for fighting communism in Afghanistan filled Pakistan with mullahs, madrassas, mosques, movements, bigots, narcotics, jihadists and weapons. As a *collateral damage* of the Afghan war, Pakistan has to bear a big quantum of sectarian terrorism as well. Second, to avenge for the grievances against Pakistan for its role in Afghan war, communist Afghanistan and the Soviet Union sponsored terrorism activities in Pakistan.

Capitalism becomes more relevant to explain terrorism in Pakistan after 9/11, especially in the FATA and Baluchistan. The U.S.-led invasion of Afghanistan has three commonly known objectives: hunting out al Qaeda and to fight Taliban; pumping the oil reserves in the Central Asian States through Pakistan; and encircling and containing China. Because of its geostrategic location in the region, Pakistan is the key to achieving all the three objectives. First, against al Qaeda and Taliban, Pakistan has already helped the U.S a lot except for a few instances where Pakistan's national interest was severely damaged. Second, pumping oil reserves is also possible and Pakistan has no objection if the U.S. succeeds in securing a corridor to Turkmenistan through Afghanistan. Third, issue of China's containment is problematic for Pakistan and Pakistan's reservations,

most probably, have created problems for it in Baluchistan. Pakistan is neighbor of China and a China's shortest possible access to the Indian Ocean near Persian Gulf. Pakistan has built Gwadar port near the Strait of Hormuz at the mouth of Persian Gulf with the Chinese help. The U.S. analysts believe that this port is likely to project China's naval presence in the region near the Gulf where 55% of the oil reserves are. It is making China's access to the world market easy. It will also make China's relations with Pakistan stronger. India having enmity with China, also takes Chinese presence near its waters as something intimidating. There is likelihood of Gwadar port being offered as an alternative to Dubai and Iran's newly built free trade port Chabahar. Therefore, the U.S., India, and Iran would never like this port to work¹² and terrorism in Baluchistan is closely linked to the establishment of Gwadar port.

As a consequence of Afghan war, 'Kalashnikov Culture' developed in Pakistan, engendering in people a love for weapons. That's one of the worst things ever happened to Pakistan. The U.S. bought weapons from China and supplied to mujahedeen through Pakistani ISI. Half of the weapons never reached the mujahedeen or were sold in the local market by the mujahedeen. Arms became dirt cheap. Arming of the society made taking up arms on any issue, an easy option for the disgruntled. According to C. Fair (2004: 101), "as the rise of terrorist movements in Karachi were generally coincident with the spread of small arms in Pakistan, these outfits have had little problem acquiring light

¹² For a detailed account of the U.S. interests in Baluchistan please read a U.S. government document "Baloch Nationalism and The Geopolitics of Energy Resources: The Changing Context of Separatism in Pakistan" by Robert G. Wirsing, April 2008.

machineguns and rocket launchers” which explains increased violence and the resultant lethality.

Cyclical movement is the characteristic pattern of daily, weekly, monthly and yearly incident data. Terrorism occurs in waves: terrorism today is correlated with what happened yesterday; terrorism this week is correlated with what happened last week; there is seasonality in monthly data; and yearly data show longer cycles every time. Cycles are reflective of the internal and external dynamics of terrorist organizations. Terrorists’ preparation, initiative and the government’s indecisiveness take the violence to the peak. Terrorists’ exhaustion or the government’s action brings the violence down but for some time. As the conflicts, the basis for the violence, remain intact, the terrorism comes again with new agenda.

Provincial and national capitals are the hardest hit places, as brought out by the spatial analysis in the paper. Capitals are the hardest hit because they have symbolic value as the seat of the government, making the terrorist act more theatrical. Moreover, whatever the source of the grievance, the government serves the strategic logic of terrorism better—challenge the authority, attain theatrical value, and be more symbolic. The case of Karachi is unique; it is not only the provincial capital but the source of conflict too. This leads us to the proposition that capital and conflict combined create more terrorism compared to either capital or place of conflict singly.

Private Citizens, their property and businesses remain on the top as victims of terrorism in Pakistan. Most likely, they are defenseless and hence soft targets; they are

innocent, hence hitting them creates more alarm as compared to hitting the police or military personnel. Hitting the citizens is in line with the strategic logic of the terrorists; citizens are more likely to compel the government to accept terrorist's demand.

The paper has a value for theoretical, policy and operational reasons. As far as its contribution to theory is concerned, there are some important observations to make. First, terrorism is still hard to define and measure and as it is true that one man's terrorist is other man's hero, it is also true that one times hero may be other times villain. Second, no account of terrorism is complete without discussing the internal and external state actors and the geostrategic politics of the region; terrorism in Pakistan is never apolitical. Third, terrorism is a dynamic phenomenon changing patterns with time: temporal patterns, spatial patterns, victim type, weapon types and motives all change with the situation. Fourth, unresolved conflicts are the essence of terrorism. It is permanent feature of every terrorism movement. Fifth, terrorists select targets because of some strategic logic. Either the targets afford them maximum propaganda value, or they have symbolic value for them, or they are confronting them to counter their actions, or they are the direct enemy, or there are some ideological grounds for attack. Sixth, the terrorists' weapon choice may indicate their linkages. Generally speaking, locally sponsored terrorists would use firearms and the externally controlled terrorists would most probably use explosives. In addition, the weapons use also indicates strategic logic of the terrorists; destabilize the state, or the government, or just one section of society. Frequency of the events is the forte of the locally sponsored organizations and magnitude of the events strength of the externally sponsored. Target selection also indicates the likely sponsorship of terrorism.

Locally sponsored terrorists would attack their direct enemies, most of the times, while externally sponsored terrorists would attack infrastructure or the government agencies or the private citizens.

The study provides evidence against Black (2004)'s view that terrorism is essentially against the superior. In Pakistan, sectarian terrorism and language-based terrorism are all against the weak minorities. The study also rejects Rosenfeld's view that terrorism requires the co-existence of grievances and high social distance. In Pakistan, the religious militants may have maximum social distance from the Hindus (Muslims have maximum things in common with Christians and Jews as followers of the revealed religions), and obviously they have very deep grievances against them. But terrorism against them in Pakistan is unheard of. May be the immediate context is important for understanding terrorism dynamics. Pape's view that suicide attacks are against foreign occupation finds no support here, as suicide terrorism in Pakistan is mostly against the government of Pakistan's operation in Islamabad's Red Mosque. Rather the findings tend to support defiance theory.

The paper's results from the analysis of time and spatial patterns of terrorism in Pakistan are of particular relevance for policy. Resources could be deployed keeping in view the time patterns and spatial patterns observed. Additionally, conflicts generated by socioeconomic conditions have surfaced as the mainstay of terrorism. It makes it important for the policy makers to look into the prevailing conflicts. Conflicts, generally, have valid grounds and could be dealt with conflict management through constitutional measures. It is also important for policy makers to look at how they should place

themselves within the changing geostrategic politics of the region. For the immediate amelioration of the situation, an enhanced law enforcement infrastructure is required. Finally, every terrorism ends but end of terrorism does not mean beginning of peace (Cronin, 2009). Terrorism cycle, which is going on in Pakistan nowadays would end in near future, unless further fuelled by the vested interests. Policy makers will have sufficient time to avert or lessen the severity of the next cycle and that is what they should be preparing for now.

The analysis of data raises a number of important theoretical questions, as it answers the others. First, is there a regular pattern by which government-sponsored organizations lead to spin-offs (LeJ in the case of SSP and MQM (H) in the case of MQM), over what time period, and by what conditions? Second, lethality is increasing, what is it about the current flavor of state destabilizing terrorism that motivates such higher casualties? Is the planning better than in the past? Are the actors less controlled by political parties that in the end want some legitimacy with the polity? Is there less evidence of specific deterrence with these groups after large sweeps and arrests are made? Third, why should the sectarian and language-based terrorism decrease, instead of continuing and adding to the overall amount of terrorism? Is it because of life cycle of growth and decline through which all terrorists organizations pass; or there is a structural limit to the amount of terrorism that can go on at one time? It may also be an interesting investigation to understand at what stage of a conflict, people turn to terrorism tactics.

In sum, the descriptive exploratory analysis in this paper reveals the patterns, producing new insights, prompting new thoughts and generating new hypotheses

contributing to make up for lack of ‘facts’ and lack of ‘theory’ on terrorism in Pakistan. However, there is one main study limitation. As compared with the FIA, the SATP and other sources, the GTD data are lower in number. Therefore, absolute numbers should be interpreted keeping this thing mind. However, the percentages are not significantly different except for the statistics on terrorist group types. But we could rely on the relative position of each group according to the percentages of cases they were involved in.

PAPER 2

POOL OF PAKISTANI TERRORISTS: THEIR CHARACTERISTICS

Since the 1990s, the international community in general and Pakistan in particular have faced quite a robust threat of terrorism. Pakistan is associated with this threat, either as a prime victim or a major source. Pakistan is a victim in the sense that during 1990 and 2009 approximately 6,000 terrorism incidents have occurred, making it one of the highest countries for which terrorism is experienced. The majority of terrorism incidents in Pakistan were perpetrated by the Pakistani citizens themselves. Also during recent years, some cases of terrorism in the U.S., Britain, Spain and France have been traced back to the people of Pakistani origin (Bergen, 2008: 19). Therefore, Riedel (2008: 31) is right to some extent that Pakistan, almost uniquely, is both a major victim and sponsor of terrorism.

Given that the Pakistanis are deeply involved in terrorism both as victims and perpetrators, it becomes necessary to probe in detail as to why such a large number of Pakistanis have turned to terrorist activities. The need is to locate the causal variables. As Babbie and colleagues note: "Often the search for causal variables involves the examination of demographic (or background) variables, such as age, religion, sex, race, education, class, and marital status. Such variables often have a powerful impact on attitudes and behaviors." (Babbie, Halley and Zaino, 2007: 189). This is exactly what this study does through an analysis of the personal, socio-economic, and demographic variables of arrested terrorists in Pakistan. I attempt to identify the common features of

terrorists in Pakistan, and possibly to make a profile of terrorists operating in the country. The study also investigates the extent to which terrorists are just a cross-section of the society they belong to, and what makes them terrorists—are their characteristics different from society in general? I also probe two additional questions: How terrorists belonging to different terrorist group types might differ in personal, socioeconomic and demographic characteristics? And what predicts the number of cases against a terrorist?

Therefore, this study is not a direct answer to the question of why Pakistanis indulge in terrorism, but is an analysis of terrorists' characteristics. Identification of potential causal factors through studying these characteristics may serve as a *springboard* for further in-depth research on why people engage in terrorism. This is the intended theoretical contribution of this study. Law enforcement practitioners and policy makers can also benefit from this study in many ways. Most importantly, policymakers would know what sections of society are more inclined to terrorist activities, and they might focus on that particular section of society. Through this study, it becomes clearer what variables are important in detecting and explaining the prevalence of terrorists in a society. Therefore, another benefit of this study might be identifying what data to maintain helping the practitioners and policy makers in operational planning and future policy-making.

Despite the theoretical, practical and policy implications of such a study, the literature on this topic regarding Pakistan is scant. The research seems to be either at an early stage, or it has not started yet. The study by Bajoria (2008) although titled “Pakistan’s New Generation of Terrorists” attempts to profile terrorist groups not

individuals. Asal et al. (2008: 973), using data from 141 families of slain militants from Pakistan, examine the factors that lead household members to give or refuse consent for other household members to become a militant. Their study concludes that comparatively well-off people do not allow their household members to join Jihad, and that unemployed people are more likely to become militants. The madrassa education and sect did not matter. The study uses a convenient sample, too small to be considered representative. The results concerning the madrassa education and sect are surprising because in Pakistan, 90 % of the Jihadis are from the Deobandi sect, and there is a strong likelihood that areas with more madrassas may be producing more religious militants. Except for these two studies, no worthwhile study could be available on search.

The studies beyond Pakistan have a variety of conclusions as will become clearer from the following account of the state of theory and evidence on terrorists' personal, demographic and socioeconomic characteristics.

PERSPECTIVES ON PROFILING TERRORISTS

Profiling terrorists is not an easy task, because terrorists are not “a single entity—as billiard balls without any distinctions” (Rosenthal, 2006). Generalizations come with qualifications, and more so in the case of characterizing terrorists, because they come from diverse backgrounds. Realizing this difficulty, McCauley and Moskaleiko commented in their research brief titled *Pathways Towards Radicalization* on the

START¹³ website, that it was unlikely that there would be any one “conveyer belt” to terrorism that could be identified and targeted to reduce terrorism. Despite these two very relevant observations, researchers have produced some interesting work on profiling terrorists. The research has resulted in some stereotypes being exploded. Some characteristics have been true for a particular type of terrorists but not for others. A few characteristics have been found in almost all terrorists. Given this diversity of results, research on terrorist profiling provides us some insights on the sociological, demographic and personal characteristics of terrorists. This helps us understand better the causal factors which may have led individuals to turn to terrorism.

According to Hudson (2002), the theories offering psychological explanations of terrorism fall into two categories: Psycho-Pathological theories and Psycho-Sociological theories. These theories focus on questions such as: Who are terrorists? Why do they join and why they stay? Is there a specific terrorist personality, and what are the psychological mechanisms of group interaction? Psycho-Pathological theories take nonviolent behavior as the norm, and violent behavior as an abnormality. Schmid and Jongman (1988), basing their opinion on behavioral studies and profiles, identified a distinguishable terrorist personality—spoiled, disturbed, cold and calculating, perverse, excited by violence, psychotic, maniac, irrational and fanatic. However, Crenshaw (1981) believed that terrorists do not show any striking psychopathology. Rather, the most outstanding

¹³ National Consortium for the Study of Terrorism and Responses to Terrorism at the University of Maryland.

characteristic of terrorists is their normality. Collins (2008) argues that terrorists are rather more normal than the others. “Terrorist bombing is, so to speak, the violence of the meek.” These terrorists, according to him, are from the respectable middle class and they are very calm. Turk (2004: 278) asserts that “opposition to authority or a particular social order is more likely to stem from a reasoned position than from pathology or deficient socialization.” This reasoned position, according to him, is now emanating from some cosmological or religious beliefs. He adds further that people adopt terrorism when they start believing that their objectives cannot be accomplished by nonviolent means.

Psycho-Sociological Theories explain terrorism by individual characteristics supplemented by environmental factors. They consider unique political, historical, and cultural contexts, as well as the ideology and aims of the groups involved. The first variant of the theory—relative deprivation—connects individual mobilization of aggression and political violence to social, economic and political circumstances. This variant defines relative deprivation as the gap between expectations and satisfaction. Brynjar and Katja H-W (2000: 12) states: “Several systematic studies of relative deprivation theories have supported the hypothesized relations between frustration and aggression”. The second variant—contagion theory—posits that the decision by terrorist groups to launch an attack is influenced by similar attacks elsewhere, a finding confirmed by the study conducted by Weimann and Brosius (1988: 498-499).

Turk (2004) discusses the background and the socialization process of radicals and terrorists. In democratic societies, political radicals belong to relatively advantaged sectors, he asserts. They start with conventional political activism. More educated and

affluent they are, the more impatient they are likely to be with the inevitable gaps between ideals and reality. Terrorism “is nearly always the work of radicalized younger persons with the intellectual and financial resources, and the ideological drive, to justify (at least to themselves) and enable adopting the violence option” (Turk, 2004: 279). Based on his analysis of the case of Timothy McVeigh (the convict of bombing the Murrah federal office building in Oklahoma City, killing 168 people), Turk concludes that “exposure to ideologies justifying terrorism appears to be a crucial ingredient in the mix of personal and vicarious learning experiences leading to a commitment to terrorism” (279). Turk observes that Islamist fundamentalism, in particular, seems to depend on radicalization through formal education consisting mostly of religious indoctrination. He quotes Kushner (2003: 357–59) as saying that madrassas drill into the potential recruits’ mind, the most extreme interpretations of Sunni theology (which he terms archaic and rigid version of an Islamic society), emphasizing the duty to engage in holy war (jihad) against all enemies of the true Islam.

Turk (2004: 279) explains that “Once underway, campaigns of terrorism and related political violence tend to gain momentum. Inspired by the ideological messages, the charisma of leaders, the potential for material or status gains, or whatever else attracts them, others are likely to join.” Out of many reasons as to why specific individuals reach the point where they see themselves as “bearers of the responsibility for violent actions” may be the self concept as one who must fight against the threat to “us.” This self-concept may have been developed through education, training, and socialization.

Russell and Miller (1977) drew a sociological portrait of the then modern urban terrorist, using data on 350 individuals in 18 worldwide revolutionary groups which were active during 1966-1976. According to this study, individuals engaged in terrorism possessed common characteristics of social origin, political philosophy, education, age, and family background. The urban terrorists were between 22 and 25 years of age and were unmarried. They came from middle- and upper-class families and had university education. To further emphasize the importance of ideology, Albini (2001) claims that religion or some political ideology serves as “a meta-morality to the terrorists.” And that the new breed of terrorists is highly sophisticated in technological skills and sometimes motivated by monetary incentives as well.

Unemployment, social alienation, action-seeking, desire of using learned skills, ideological motivation and idealism are the characteristics of terrorists identified by Hudson (2002: 36). While, research conducted at the University of Haifa, identifies religiosity, previous records in violence and somewhat older age as signs of persons who decide to become suicide bombers after listening to fiery sermons by charismatic imams (prayer leaders) (Weinberg, Pedahzur and Canetti-Nisim, 2003: 142). Further, Atran (2008: 3) claims that since the invasion of Iraq, Jihadi martyrs are coming from more egalitarian, less educated, materially well off, and more socially marginalized classes. People are inspired by the *takfiri* message of withdrawal from impure mainstream society and the need for violent action to cleanse it.

Several studies explore some myths to reject them. For example, Barro (2002) refuted the myth that poverty breeds terrorism by arguing that poverty is not a root cause

of terrorism. The author mentioned a paper written by Alan Krueger and Jitka Maleckova, which offers evidence that terrorists have relatively high levels of education and income. Another study by the British intelligence agency MI5 takes apart many of the “common stereotypes about those involved in British terrorism” (Travis, 2008). Contrary to popular belief, the report describes them as British and not illegal immigrants, and not Islamic fundamentalists but rather religious novices. Nor are they “mad and bad”. They are over 30 and just as likely to have a wife and children as to be loners with no ties. No influence of radical extremist clerics is detected.

In sum, scholars have found some common characteristics of terrorists, but it is difficult to generalize from these common themes. After examining the social histories of some 40 neo-Nazi males, Hamm (2004) concluded that there was great diversity in the human conditions that adapt people to the sub-culture of terrorism. Brynjar and Katja H-W (2000: 8) tried to give us an idea of the possible diversity: “We find terrorists among deprived and uneducated people, and among the affluent and well educated; we find terrorists among psychotic and ‘normal’ healthy people; and among people of both sexes and all ages.” Even in the article for *The Guardian*, Travis (2008) concludes that it is “not possible to draw up a typical profile of the “British terrorist” as most are “demographically unremarkable” and simply reflect the communities in which they live.”

DATA AND METHODS

DATA

The data originate from different police agencies in Pakistan and consist of 2,344 cases of terrorists arrested during 1990-2009. The police agencies which provided the data include all the four provincial police forces and the federal police, leaving no agency out. The data include cases of only those arrestees whom the police actually found guilty after investigations and sent to court for prosecution. The data cover the period from 1990 to 2009 because data before 1990 are not available. The prime reason is that the specialized agencies maintaining terrorists' records were established in the 1990s and afterward: NWFP in 1992; the Punjab in 1996; Sindh in 2002; and the federal capital in 2003. These agencies have collected data from 1990 onward.

Arguably, the data are legitimate source for describing terrorists. The police have no obvious incentive to make wrong entries; they collected the data as part of their routine duties; and the data were not originally collected for public use. Furthermore, I compared the data from the provinces with the data available at the national levels, removing the duplicates and correcting the information if found different, by going to the original source. Because there is no alternative source available, we have to be content with the police sources. However, as far as the number of arrestees is concerned, I compared the Pakistani police data with the data reported by the South Asia Terrorism Portal (SATP). I found the Pakistani police data showing a higher number of arrests,

making it less susceptible to under reporting. The SATP takes data from the media, and the media is likely to miss many arrests which police actually make a record of.

The number of cases in the dataset is very large (2,344); the highest number published yet is 141 (see Asal et al., 2008). The data contain cases from all the four provinces of Pakistan and all the areas administered by the federal government. All the ethnicities, all the sects, and all the terrorist groups operating in Pakistan are represented in these data. Information is available on a variety of terrorist types: hardcore, peripheral, suicide bombers and the terrorists killed during police encounters. Arrestees of both the sexes are present in the data. Finally the data are for 20 years, making the series represent different time periods.

However, the data are not representative in the statistical sense of the word because they are not based on random sampling. Random sampling would have been the ideal way to proceed as suggested by statistical methods but for many reasons, it was unfeasible. First, the police records in Pakistan are paper-based and there is no way to search them for arrests to compile a list to sample from. Second, terrorist arrests generally are a matter of secrecy, and some records are still secret, making sampling difficult. But on the basis of the number of cases (2,344) and their consistency with the media, I can strongly argue that the data encompass all or nearly all terrorist arrests during this period. Lastly, no open source database exists which could provide this information. Most databases provide information on terrorist incidents only. Therefore, under the circumstances, Pakistani police sources are the best sources possible.

Variables: Definitions and Description

Different personal, demographic and socioeconomic variables included in the data are listed below along with their brief definitions and descriptions.

Table 1. Variables, their Definitions and Descriptions

Variables	Definition
Significance of names	According to Bloothoof and Groot (2008: 111), parents do not choose names for their children at random; names indicate cultural, linguistic, or ethnic parental backgrounds. Names are generally affected by underlying cultural themes, with two major parental characteristics—education and race—modifying these general patterns. Names also are indicative of parents’ aesthetic dispositions (Lieberson and Bell, 1992: 512). Names in Pakistan generally suggest the religiosity, modernity, neutrality, and/or ethnicity of parents.
Significance of castes	Though the situation is changing, Pakistani society in general “values and actively seeks similarities in social group identity” based on caste, a social strata based on lineage, tribes, clans, or traditional occupation (Hussain, 2005: 145). Barth while writing about Pakistan (1962: 113) regards castes (<i>quom</i>) as a hierarchical system of stable social groups, differing greatly in wealth, privilege, power and the respect accorded to them by others. Castes are an essential part of police and court records in Pakistan ¹⁴ . Castes traditionally tell about people’s social status, bravery and religiosity. Therefore, based on police officers’ knowledge of the area and Rose’s 3-volume book, the castes of the arrested terrorists were ranked on a 3-point scale (high, medium, low) in terms of their social status, bravery and religiosity.

¹⁴ Readers interested in a detailed account of caste system in Pakistan which is somewhat different from the caste system in India may refer to H.A. Rose’s “A glossary of the tribes and castes of the Punjab and NWFP” (1962).

Ethnicity	Punjabi, Sindhi, Balochi, Brohi, Pashtun, Muhajir
District of residence	Permanent resident district of the terrorist
Rural urban	Within the district, did the arrestee belong to a village or the district headquarters? District headquarters are not of uniform population but are generally the biggest town/city in a district.
District of arrest	District where the terrorist was arrested; it may be different from their district of residence.
Age	Age on the day of arrest; age on the first terrorist act is not available.
Education	Educational level in the traditional school system
Madrasa education	If attended madrasa on regular basis—Yes or No
Sect	Shia, Sunni (Deobandi, Bareilvi), Ahal-e-Hadith
Terrorist Group Type	Political, Sectarian, Muslim Militant, Al Qaeda, Foreigner, Ethnic (Language), Ethnic (Race)
Number of siblings	Number of brothers and sisters including the terrorist
Marital Status	Married, Single
Employment Status	Employed (White Collar, Blue Collar, Professional, Business), Unemployed
Weapon Training	Yes or No
Specialized Skills	Bomb making, suicide jacket preparation, grenade throwing, rocket launching, light machine gun firing
Financial position	Good, moderate, poor
Children	Number of children
Number of cases involved in	Number of terrorism cases involved in

ANALYSES

I analyzed the data using the Geographical Information System (GIS), univariate and bivariate statistical analyses. The results' section, after describing the summary statistics of data, presents the geographical distribution of terrorists in terms of their resident districts. The results section proceeds to present the univariate analyses. In the beginning, the analysis of what may be called the societal factors is given. Then the results are presented on personal or individual variables. The results section ends with bivariate analyses and terrorist group comparisons.

RESULTS

SUMMARY STATISTICS OF DATA

The variables in the data are measured at three levels: nominal, ordinal and interval. Therefore, for the sake of clarity, summary statistics of variables have been arranged in the same order in table 2. The descriptive statistics show that names of bigger proportion of arrestees indicate religiosity of their families. Pashtun is the dominant ethnicity in the arrestees, as Deobandi is the sect. The majority of arrestees (Please interpret these percentages keeping in mind the number of observations) are madrassa educated (76% of religious terrorists), married (62%), employed (82%), weapon trained (87%), city dwellers (55%), and poor (68%). Most arrestees (42%) belong to Muslim militant type of terrorists. The maximum number of terrorists is educated between 9 to 12

years. Except for four arrestees, all are male. The bigger proportion measured on district level belongs to Karachi and is arrested in Karachi.

Table 2. Summary Statistics of Data

Variable	Mean	Median	Mode (%)	Std. Dev.	N	Min.	Max.
Nominal Variables							
Names			Religious (76%)		2,272	1	4
Ethnicity			Pashtun (35%)		1,769	1	7
Madrassa education			Yes (76%)		256	No	Yes
Sect			Deobandi (90.5%)		1600	1	7
Marital status			Married (62%)		199	No	Yes
Weapon training			Yes (87%)		180	No	Yes
Group type			Muslim Militants (42%)		2076	1	9
Employment			Employed (82%)		145	Misc. Employment	Unemployed
Specialized training			Yes (57%)		121	Yes	No
Urban rural			City (55%)		1941	Rural	City
Financial status			Poor (68%)		176	Poor	Rich
Sex			Male (99.8%)		2344	Male	Female

District of residence			Karachi (24%)		2196	1	105
District of arrest			Karachi		2061	1	103
Province			Punjab (33%)		2195	1	7
Ordinal Variables							
Social		Medium			1045	Low	High
Bravery		Medium			1045	Low	High
Religiosity		Medium			1045	Low	High
Educational attainment		Years (9-12)			239	Illiterate	Professional
Interval Variables							
Cases	3.073248	2	1	4.947428	314	1	40
Siblings	4.489362	5	5	2.165664	47	1	10
Children	2.942308	2	0	2.652512	52	0	10
Age	30.73364	30	26 and 30	7.99936	214	16	60

Terrorists' age ranges between 16 and 60, averaging 30 years. The near equality of mean, median and mode indicates the normal distribution of age. The average number of their siblings is 4.5 with a standard deviation of 2.16. The average number of their children is approximately 3 and the range is from 0 to 10. The number of terrorism cases against arrestees varied from 1 to 40, with an average of 3 and standard deviation of approximately 5. A detailed discussion of all the variables is given below.

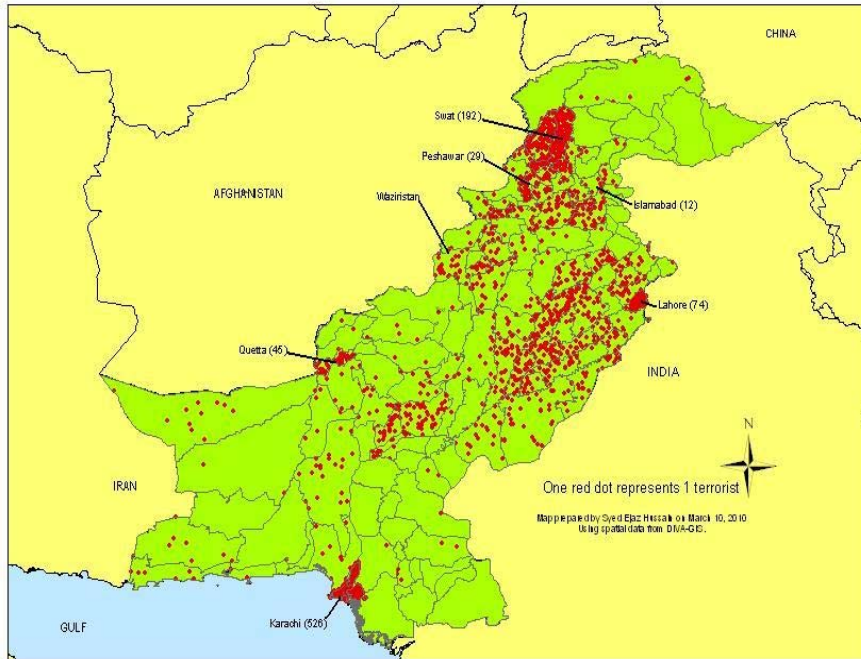
UNIVARIATE ANALYSES

Spatial Distribution—Residential Areas of Terrorists

In terms of their birth places and usual residences, terrorists are not uniformly distributed across Pakistan. Some areas have a conspicuously greater number of terrorists living in them, and may rightly be called *hotspots*. For the purpose of this study, I consider a district hotspot where at least 30 terrorists were living – as a measure of terrorist density. Terrorists’ distribution on the country, province and district level is presented below, through the GIS map and bar graphs.

The Geographical Information System (GIS) map in figure 1 presents terrorists’ geographical spread at the country level, highlighting the *hotspots* with denser concentration of dots. The density of dots on the map show that the terrorists mostly reside in Karachi, Swat, Dir, central and southern Punjab, Waziristan, Quetta, and the central part of Baluchistan. The geographical distribution of terrorists’ residences in different provinces and federally administered regions of Pakistan is presented through bar graphs in figure 2. The bars clearly show that the Punjab has the maximum number of terrorists (721, 33%) living in its jurisdiction, followed by the NWFP (559, 25%), Sindh (537, 24%), Baluchistan (239, 11%) and the FATA (55, 3%). Islamabad Capital Territory, Northern Areas and Kashmir have been combined as Islamabad. They have the minimum number of terrorists (29, 4%). Foreign terrorists are 56 (3%) of the total arrested. The relative positions of provinces change when population is used as a standardizing factor. The NWFP leads and is followed by Baluchistan, Sindh, the FATA,

Figure 1. Arrested Terrorists' Geographic Spread



the Punjab and Islamabad, in order of the number of terrorists belonging to these areas per 1, 00,000 persons in the population.

Figure 3 presents the distribution of terrorists at district level with Karachi at the top with 526 terrorists; 24% of the total terrorists in the country and 98 % of terrorists in Sindh. Karachi is followed by Swat (9%), Jhang (4%), Lahore (3%), Attock (2%), Quetta (2%), Lower Dir (2%), Rawalpindi (2%), Dera Bugti (2%), Upper Dir (2%), Muzaffargarh (2%), Khanewal (1.7%), Multan (1.6%), Bahawalpur (1.5%), Bunair (1.5%), South Waziristan (1.5%), Dera Ismael Khan (1.5%), Malakand (1.4%) and Peshawar (1.3%), listed in order of the frequency of terrorists living in them.

Figure 2. Spatial Distribution of Terrorists in Provinces (N=2196)

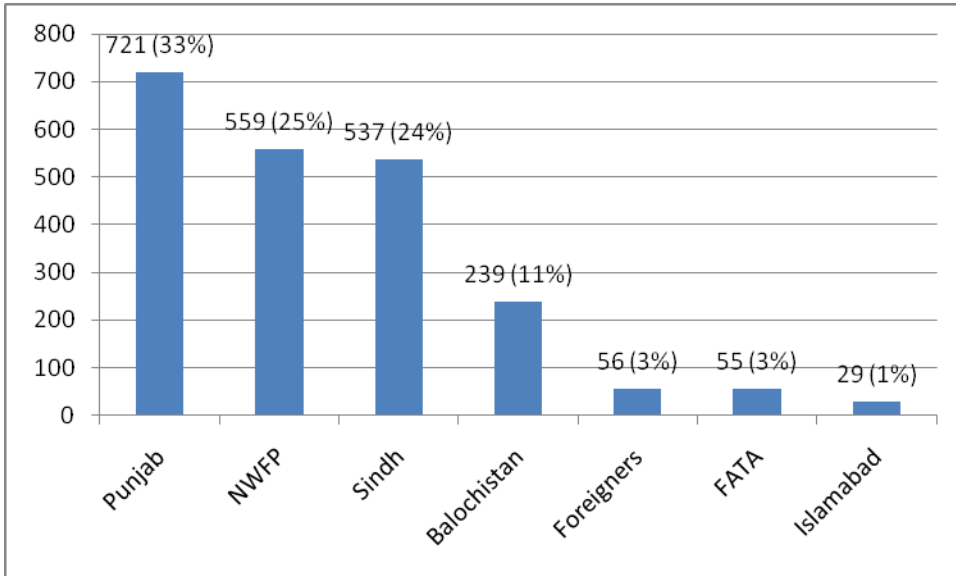
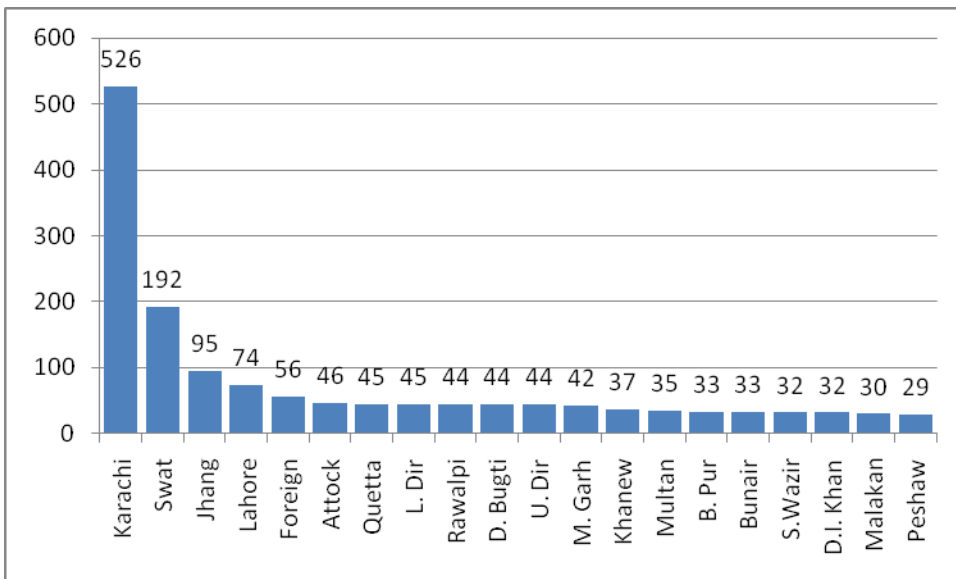


Figure 3. Spatial Distribution—Top 20 Districts (1990-2009)



Two factors could be identified as possible predictors of these distribution patterns. The most important of the predictors of terrorist arrests is the presence of

conflict—religious, linguistic and racial. Karachi is the battleground for language-based violence, southern Punjab is the birthplace of sectarian problem, areas of the NWFP (Swat, Dir and Waziristan) are bastion of Muslim militants trying to enforce their own brand of Islam, and the central Baluchistan is the base of Baluch nationalism, based on race. The other important factor which could be a strong predictor of the number of terrorists (sectarian and Muslim militants) in an area is the number of madrassas. As an illustration, the correlation between the number of religious terrorists, resident of 35 districts of the Punjab and the number of madrassas in those districts is 0.66. Even with just 35 observations, this correlation is statistically significant with a p-value of 0.000. It's a strong association according to the standards described by Babbie, Halley, and Zaino (2007: 229).

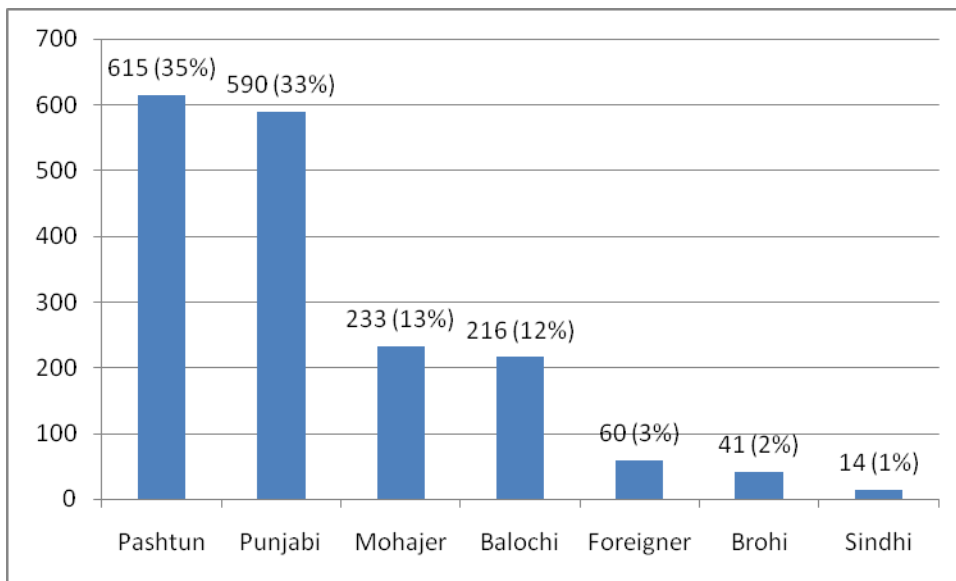
Distribution on Ethnic Basis

In absolute terms, 615 (35%) terrorists belong to Pashtun ethnic group as shown in figure 4, while ethnically Pashtuns are only 15% of the total population of Pakistan. Punjabis including Seraikis are about 55% of the total population but 590 (33%) arrested terrorists are Punjabis. Muhajirs terrorists constitute about 13% (233) of the total arrestees but they are 7.6% of the population. The number of Balochi arrested are 216 (12%) against their ethnic percentage in Pakistan of only 3.57%¹⁵. On the scale of percentage of arrestees divided by the percentage of total population of Pakistan,

¹⁵ Percentages of ethnicities were taken from Wikipedia, <http://en.wikipedia.org/wiki/Pakistan>, retrieved on March 19, 2010 at 6:20 p.m.

Baluchis are on the top, followed by Pashtuns, Muhajirs, and Punjabis. One possible determinant of their relative position might be the military operation conducted against them. Military operations meant enhanced effort and more arrests. Military operations were conducted in the NWFP (2009), Baluchistan (2006), and Sindh (1992-94, 1998). No military operation was conducted in the Punjab. This leads to the conclusion that the number of arrested terrorists may be a good proxy of the number of terrorists in an area, but the number may depend on the efficiency of law enforcement agencies as well. The more efficient law enforcement agencies leading to more arrests may give us the impression that the areas have more terrorists living in their jurisdictions compared to the similar areas with less efficient law enforcement agencies.

Figure 4. Ethnic Distribution of Arrested Terrorists



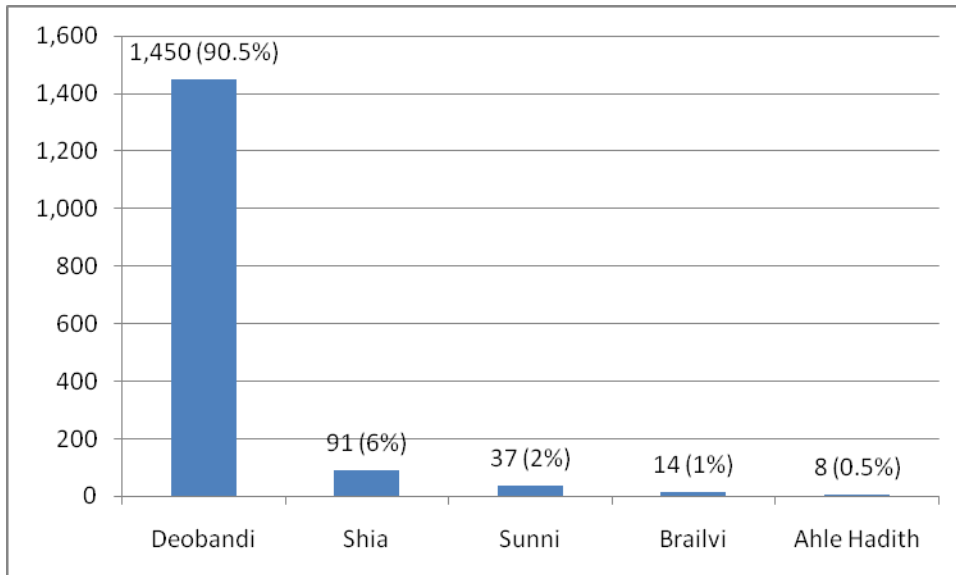
Rural Urban Distribution

Fifty five percent (n=1074) of arrested terrorists are city-dwellers, and 45% (n=869) belong to the rural area. Whereas according to the percentage provided on Wikipedia, Pakistan's urban population is 36% of the total, leading us to the conclusion that urban people are proportionately more involved in terrorism as compared to their percentage in the total population. This suggests that terrorism, like crime, in Pakistan is primarily an urban phenomenon involving targeting people in high population areas.

Distribution of Sects

Figure 5 presents bar graph based on 1600 observations of arrestees' sect affiliations. These arrestees belong only to the categories of Sectarian, Muslim militants and Al Qaeda. Sect was not relevant in the case of political and ethnic terrorists, hence their information was not available. Deobandi stands out with 90% terrorists belonging to this sect and is followed by Shia with 6%, Sunni with 2%, Bareilvi with 1% and Ahle Hadith with 0.5%. Sunni category is a generic category comprising of both Deobandi and Bareilvi. In some cases, only the Sunni is mentioned as a sect and not its specific form, Deobandi or Bareilvi. Therefore, Sunni is created as a separate category, but in fact they are either Deobandi or Bareilvi.

Figure 5. Distribtuion of Terrorists on Sect Basis (N=1600)



It is interesting to look at the beliefs and history of Deobandis to account for their exceptionally high involvement in religious terrorism (Sectarian, Muslim Militant).

Deobandis are named after Darul-Uloom at *Deoband*, India—an Islamic school established in 1866. To describe their beliefs and religious struggle, both peaceful and violent, Darul-Uloom provides an excerpt from Smith’s book on modern Islam in India. According to the Darul-Uloom’s website¹⁶:

Deoband is thoroughly dissatisfied with things as they are... Its aim is to resuscitate classical Islam, rid the Muslims of the theological corruption's [sic], the ritual degradation's [sic] ...Theologically the school stands for a rigid orthodoxy...On the practical side, Deoband 'Ulama' (scholars) are puritanically

¹⁶ <http://www.darululoom-deoband.com/>

strict. ... Their ideal is traditional Islam in its purest form with a strict enforcement of Shari'ah.

Although the Darul-Uloom was established much later, the ideology existed earlier and was derived from the movement of Shah Waliullah Dehlavi and the Indian Wahabis (the sect of the rulers of Saudi Arabia). Naturally, as a splinter group of the mainstream Sunni Muslims (Bareilvis), the Deobandis are more radical and firm believers in armed struggle. Their spiritual leaders, Syed Ahmad Shaheed (martyr) and Shah Ismail Shaheed led many revolts and attacks against the Sikhs, and in May 1831 along with hundreds of their followers were killed in a battle. Deobandis actively participated in the independence war against the British (1857). Many of their leaders remained in prison for long. In 1913, the British kept Maulana Mahmood Hasan and his associates under detention in the island of Malta in the Mediterranean Sea. Maulana Mahmood Hasan's disciples, Maulana Ubaydullah Sindhi and Maulana Mansoor Ansari were exiled.

Interestingly, although the Deobandis are puritanical Muslims, they opposed the creation of Pakistan. They wanted freedom from the British but demanded to keep India united, perhaps for their support of the idea of Pan-Islamism. However, once Pakistan was established, they wanted Pakistan to become an Islamic state with *Sharia* as its basic law. In contrast, the founder of Pakistan, Mohammad Ali Jinnah (1876-1948), clearly enunciated his vision in his address to the first constituent assembly, on August 11, 1947. He said: "You are free; you are free to go to your temples, you are free to go to your mosques or to any other place of worship in this State of Pakistan. You may belong to

any religion or caste or creed that has nothing to do with the business of the State.” To further emphasize his point, in February 1948, he elaborated: “We have many non-Muslims—Hindus, Christians and Parsis—but they are all Pakistanis. They will enjoy the same rights and privileges as any other citizens and will play their rightful part in the affairs of Pakistan.”

Although the Deobandis hated Pakistan (the land of the pure) to the extent of calling it *Kafaristan* (the land of the infidels) and its founder as the greatest infidel, from the very start, they tried to impose their own brand of Islam even in the political sphere. Under their pressure, some constitutional amendments were made by various governments to make Pakistan an Islamic, rather than a liberal democratic state. It was to appease them, that Ahmadiyya (a sect of Islam) was declared non-Muslim in 1974. Encouraged by their success against Ahmadiyya, they turned against Shias to declare them non-Muslims too, although they were together in the movement against Ahmadiyya.

Deobandis received unconditional support in the era of General Zia-ul-Haq (1977-1988), who himself was a staunch Deobandi. With this government support, the U.S., Saudi and Iraqi money, weapons, and training made them a force to reckon with in the Afghan-Soviet Union war. They increased their madrassas and mosques. Consequently, many mainstream Muslims converted into Deobandis. They sped up their already existing campaign to declare Shias as non-Muslims and make Pakistan a *Sunni* Muslim State, a nomenclature nowhere else exists—a step more down the road.

A Deobandi madrassa in Akora Khattak in the NWFP gave birth to Taliban, and they are actually Deobandis. Obviously, they have strong ties with Deobandis in Pakistan and hence find their support and inspiration from here. Deobandi Sectarian terrorists used to find refuge in Afghanistan under Taliban, and Taliban find refuge with Deobandis in Pakistan.

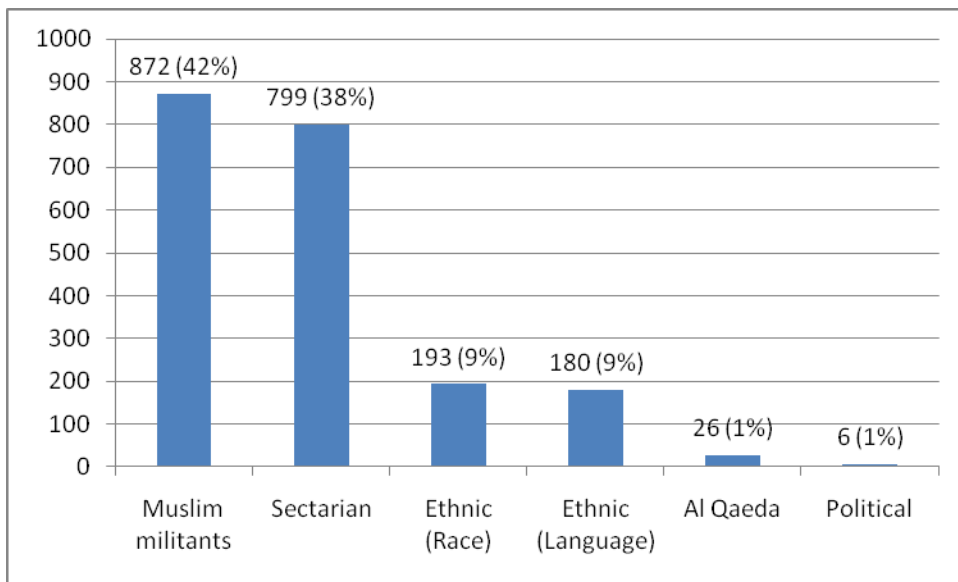
In sum, the Deobandis' original puritanical views, their historical struggle for pan-Islamism, and their earlier involvement with Jihad against the Sikhs and the British gave them an identity as Jihadis. Their opposition of the Pakistan movement and its leaders, their success in getting some constitutional amendments enacted and declaring Ahmadiyya as non-Muslims encouraged them to find new targets. Soviet invasion of Afghanistan provided the one. In the wake of this war (Jihad), they received funds, weapons, training and moral support. The president of Pakistan and the Inter Services Intelligence Chief (ISI) were Deobandis. Therefore, the Deobandis found inroads into the government as well. After the Afghan war, their new targets were Shias and the Americans, and then after the 9/11, the government of Pakistan became the number one target.

Distribution of Terrorists on Group Basis

Muslim Militants comprise of 42% (n=872) of the total terrorists arrested in Pakistan. Sectarian terrorists represent 38% (n=799) of all terrorist arrests; whereas Ethnic (Race) and Ethnic (Language) motivations comprise only 9% of terrorist arrests, and Al-Qaeda comprises only 1% of terrorist arrests. Figure 6 presents group-wise

details of composition of arrestees. Militant Muslims, Sectarian and al Qaeda combined as religious terrorists are 81% (n= 1697) of the total. Detailed reasons for their ascendance have already been discussed and can be summarized as the following: theological conflicts, government support and the supportive international milieu in wake of the Soviet invasion of Afghanistan.

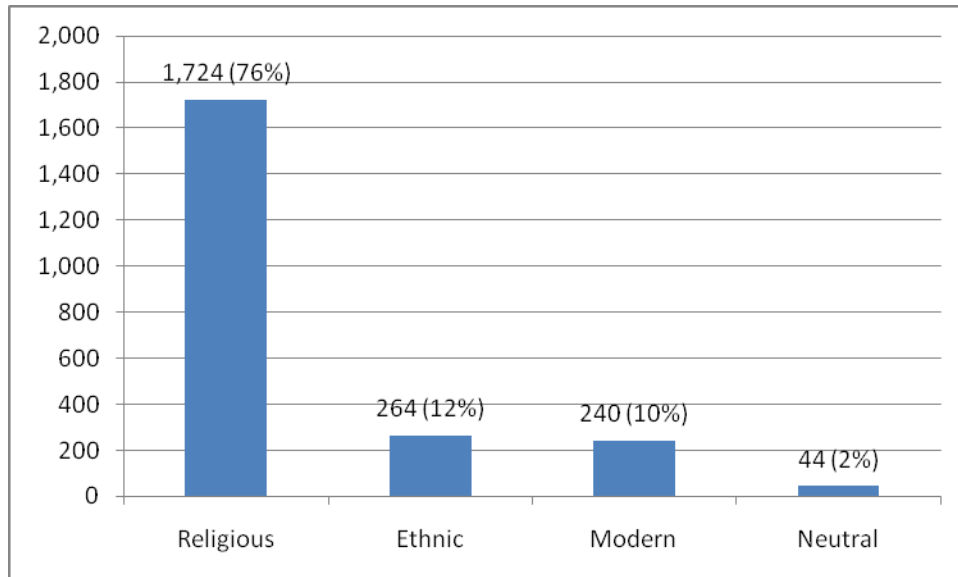
Figure 6. Distribution of Terrorists on Group Basis (N=2076)



Names and Family Background

Figure 7 presents the distribution of what the names of arrested terrorists indicate about their family background. About 1,700 (76%) names show the family as religious, 264 (12%) names demonstrate the family emphasizing its ethnicity, 240 (10%) names are modern, and only 44 (2%) names are neutral in that they do not tell anything about the parents. The highest percentage with the religious name is an indication of religious orientation of the majority of people in Pakistan.

Figure 7. Names Indicating Religious, Modern, Ethnic or Neutral Orientation of Families (N=2281).



Distribution on Social Status, Bravery, and Religiosity As Indicated By Terrorists' Castes

Figure 8 presents the distribution of terrorist arrestees according to social class distinctions. The most common category for arrestees (n=498; 48%) belong to the so-called high status, followed by medium social status (n=429; 41%); and the minority of arrestees are represented by lower status castes (n=118; 11%). Figure 9 shows the distribution of terrorists based on bravery level usually attached to their castes. The castes, traditionally perceived high in bravery account for 48% (n=501) of terrorists, medium in bravery for 31% (n=329), and the castes lower in bravery for only 21% (n=215) of terrorist incidents. Distribution of religiosity level typically attached to terrorists' castes is displayed in figure 10. Twenty three percent (n=239) of terrorists

belong to the supposed-to-be highly religious classes, 43% (n=454) to the medium in religiosity and 34% (n=352) to low in religiosity.

Figure 8. Distribution of Social Status Based on Castes (N=1045)

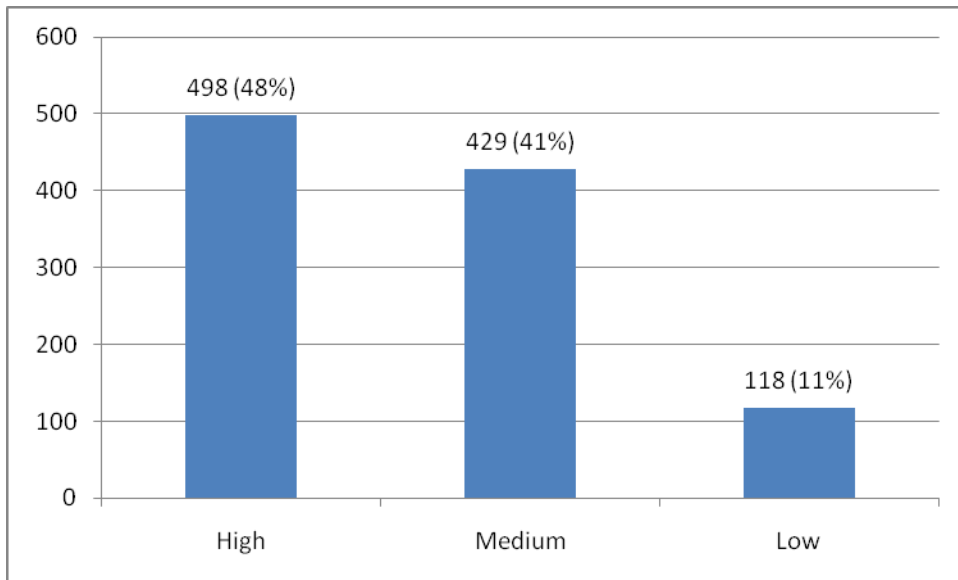


Figure 9. Distribution of Bravery Status Based on Castes (N=1045)

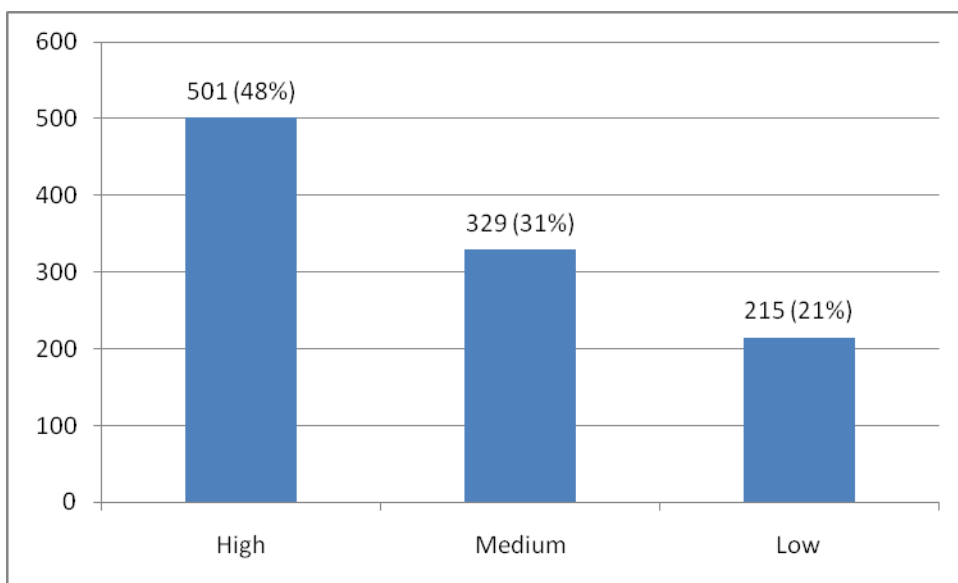
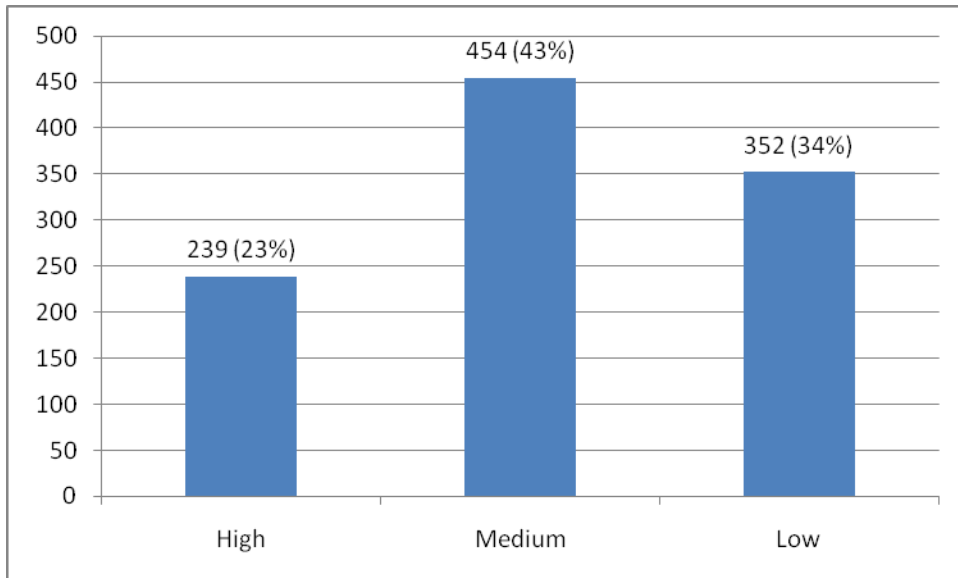


Figure 10. Distribution of Religiosity Status Based on Castes (N=1045)



Distribution on Educational Attainment Levels

Table 3 makes it clear that about 12% (n=29) terrorists are illiterate, 34% (n=81) have 1 to 8 years of schooling, and 39% (n=92) have schooling between 9 and 12 years. The people educated up to 12 years of education in Pakistan may hardly be considered as well-educated. The majority of arrestees went to public schools with bare minimum facilities and poor educational standards. Arrestees seldom went to schools where the medium of instructions was English. Furthermore, their detailed interviews indicate that most of them were just struggling with their education. Terrorists educated beyond grade 12, and terrorists with professional degree (doctors, engineers) may be considered well-educated, and this group represents only about 15 percent of all arrestees.

Table 3. Distribution of Terrorists on Educational Attainment Levels (N=239)

Educational attainment levels	Frequency	Percentage	Country percentage
Illiterate	29	12.13	46.2
Years (1-8)	81	33.89	30.1
Years (9-12)	92	38.49	17.6
Years (13-16)	31	12.97	5.9
Professional (Doctors, Engineers)	6	2.51	
Total	239	100.00	

Comparison of the educational attainment levels of the arrested terrorists and that of the average Pakistani citizens (Ministry of Labor, 2007) shows that proportionately more educated people are involved in terrorism. Similar conclusions are reached by Berrebi's (2007) study of Palestinian terrorists. Hudson (2002) also report that the Cold War period terrorists have more than average education. To explain this result, Berrebi (2007) lists many possibilities, using a variety of theoretical perspectives. Comparatively high educated individuals may be involved in terrorism because of content of education that they were taught. Another factor is described as: "Highly educated individuals may be more aware of occasional instances of injustice and discrimination, and may be more aggravated by their implications"(2007: 8). Improved reasoning skills leading to better understanding of moral and religious justifications invoked by terrorists groups is listed as another factor. Berrebi (2007: 8) also argues that "education may contribute to the

development of a sense of social responsibility and civic engagement, so that highly educated individuals may feel the need to contribute to particular causes.”

In the context of Pakistan, all of the explanations are partially true. The curriculum favors a particular version of history sponsored by the military rulers. Military glamour is projected very clearly. Virtues of Jihad are exalted. The courses on Pakistan Studies and Islamic Studies are compulsory till the master’s levels. Even in the civil service competitive examinations, passing these subjects is mandatory. Books on which Jihadis were educated were compiled by the University of Nebraska in the wake of the U.S. supported Jihad against the Soviets. "The primers, which were filled with talk of jihad and featured drawings of guns, bullets, soldiers and mines, have served since then [i.e., since the violent destruction of the Afghan secular government in the early 1990s] as the Afghan school system's core curriculum. Even the Taliban used the American-produced books..." -- Washington Post, 23 March 2002 (1).

Enhanced awareness due to education is possibly a strong predictor of involvement in terrorism. Pakistanis generally perceive that the U.S. had no justification to invade Afghanistan or Iraq. Further, that the government of Pakistan shouldn’t have helped the U.S. in this invasion. People also resent the government’s operation against Islamabad’s Red Mosque. However, the discussion below would indicate that perhaps it’s the school education combined with madrassa education which may have led people to join terrorist organizations.

Madrassa Education

Out of 1697 religious terrorists, data on madrassa education are available for 15 % (n=253) of them. Seventy six percent of them attended madrassa as a full-time student at some stage of their lives. Cross tabulation of madrassa education and the school educational attainment levels is reported in table 4. The analysis shows that majority of regular school educated terrorists attended madrassa as well, and that the number of pure illiterate is just 12. Almost 50% of the illiterate terrorists attended madrassa as a substitute.

Table 4. Cross tabulation of Madrassa and School Educational Attainment

Madrassa education	Illiterate	(1-8 Years)	(9-12 Years)	(13-16 Years)	Professional	Total
Yes	11 (10%)	37 (35%)	45 (42%)	12 (11%)	2 (2%)	107 (100%)
No	12 (21%)	16 (30%)	18 (32%)	7 (12%)	2 (4%)	56 (100%)
Total	23	54	63	19	4	162

Marital Status

Strong marital attachment in adulthood inhibits criminal behavior (Sampson and Laub, 1990). Analysis of arrested terrorists reveals that 62% (n=123) of them are married and 38% (n=76) single, where single includes unmarried, or widower, or divorcee.

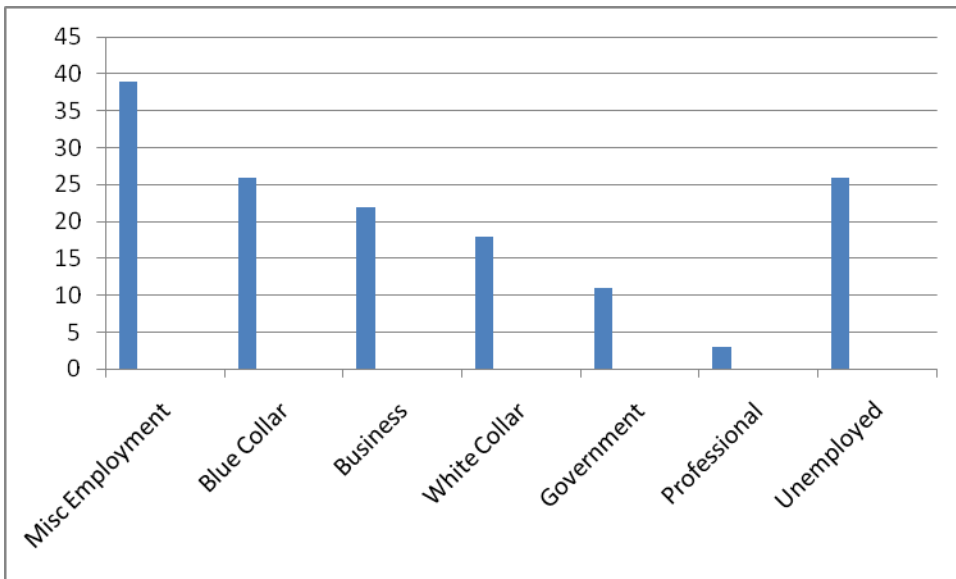
According to the government of Pakistan 1998 estimates, 63% of people aged 15 and above are married in Pakistan (Pakistan Statistical Year Book 2007, 2007). Therefore, the

married/single ratio in the terrorist population reflects the married/single ratio in the country.

Employment Status

Figure 11, based on 145 observations where employment status of arrestees was known we see that 82% of terrorists are employed. The further distribution of the employed is as the following: 27 % (n=39) in miscellaneous employments not exactly identified; 18% (n=26) in blue collar jobs; 12% (n=18) in white collar jobs but not in government; 15% (n=22)in business; 8% (n=11) in government and 2% (n=3) in professional jobs.

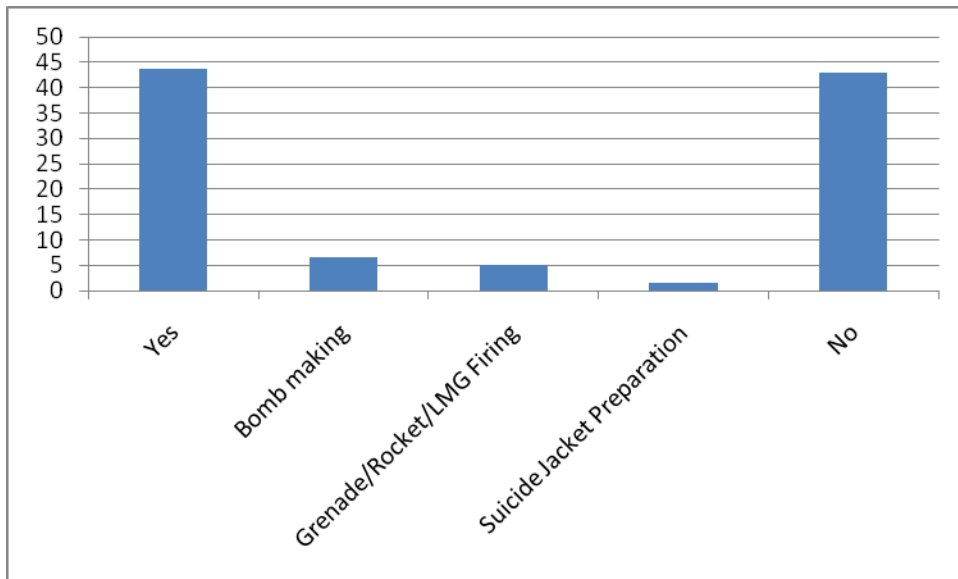
Figure 11. Employment Status (N=145)



Weapon Training and Specialized Training

Out of 180 observations on weapon training, 87% terrorists have weapon training and 13% had none. As presented in figure 12, Forty three percent of terrorists don't have specialized training. Out of the remaining 57%, 44% have specialized training but the type of training not exactly identified. Seven percent have bomb-making, 5% grenade throwing, light machine gun firing, and 2% suicide jacket preparation training.

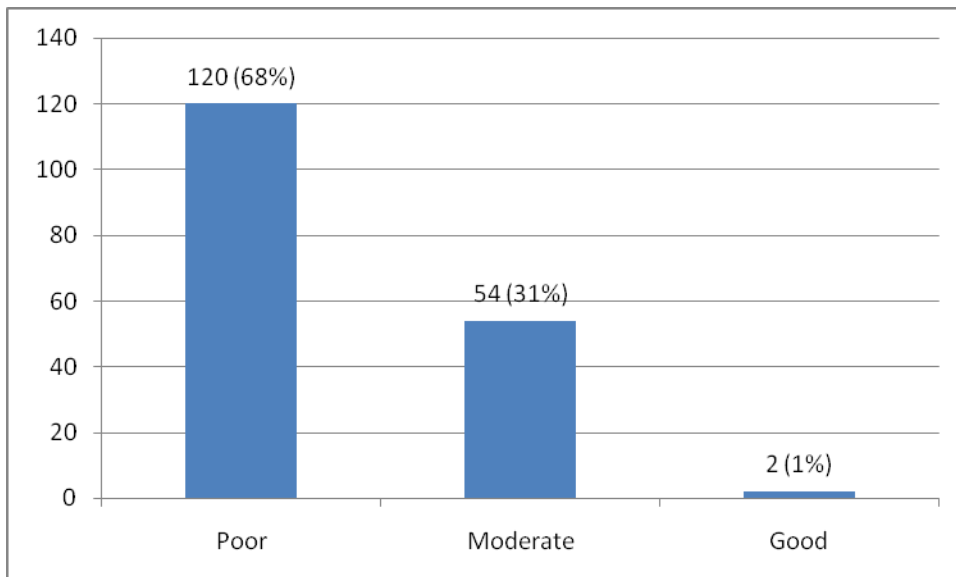
Figure 12. Specialized Training (N=121)



Financial Position

Figure 13 indicates that out of 176 observations available on the financial position of the terrorists, 68% (n=120) very poor financial status. Thirty one percent (n=54) belong to middle class. Only 1% (n=2) terrorists are comparatively rich.

Figure 13. Distribution of Financial Status



BIVARIATE ANALYSES

Through bivariate analyses, I attempt to answer two important questions: What predicts terrorists' group affiliation? And what predicts the number of cases against a terrorist? For this purpose, I tested 26 associations. Associations with correlation coefficients of at least 0.20 are reported below separately, for terrorists group types and the number of cases as dependent variables.

What Predicts Terrorists' Group Affiliation?

How different terrorist groups differ on various variables? Or the equivalent question of what predicts terrorist group affiliation is explored here and the results are given in table 5.

Table 5. Relationship Between Group Types and Other Variables

Variable	Measure of association	Coefficient of Association	N
Ethnicity	Cramer's V	0.81	1,511
Weapon training	Phi	0.43	158
Age	Cramer's V	0.33	167
Urban rural	Cramer's V	0.32	1,702
Brave family	Cramer's V	0.29	928
Educational attainment	Cramer's V	0.29	191
Number of cases	Cramer's V	0.25	287
Marital status	Phi	0.24	155
Name	Cramer's V	0.23	2,011
Sect	Cramer's V	0.21	1,499

Table 5 shows that ethnicity is the strongest predictor of terrorist group affiliation in Pakistani setting, with 0.81 coefficient of association followed by weapon training with coefficient of association of 0.43, age (0.33) and urban rural (.32). Other variables described below with their coefficients given in parentheses have moderate relationship. Brave family (0.29), educational attainment (0.29), number of cases (0.25), marital status (0.24), name (0.23) and sect (0.21) can indicate the group affiliation of an arrested terrorist. The strength of association has been categorized as strong or moderate under the guidelines provided by Babbie, Halley and Zaino (2007: 229). Because the dependent variable terrorist group type and all the predictors except age are at the most categorical, direction of the relationship is not determined. Stated differently, we can say that the terrorist groups differ from each other significantly on ethnicity, weapon training, age,

urban rural, brave family, educational attainment, number of cases, marital status, names and sect of their members.

What Predicts the Number of Cases Against a Terrorist?

Table 6 presents the analyses of the possible predictors of the number of cases against a terrorist group. Financial position of a family and marital status may be considered as strong predictors with association levels of 0.41 and 0.40 respectively. Urban rural (0.28), ethnicity (0.27), age (0.27), group type (0.25) and name (0.20), prima facie, indicate moderate relationships with the number of cases against a terrorist. Measurement level of age is at the interval level, therefore, the direction of the relationship could be determined. Age shows a positive relationship. This is understandable because with more age, terrorists have more time to commit acts of terrorism, and hence the more number of cases against them. The coefficient for age, although, is of moderate strength, but it should be interpreted keeping in mind its unit of measurement i.e. year. As a possible change of 0.27 in cases with a one year change in age may be a strong predictor.

Table 6. Relationship Between the Number of Cases and their Possible Predictors

Variable	Measure of association	Coefficient of Association	N
Financial	Cramer's V	0.41	55
Marital status	Cramer's V	0.40	90
Urban rural	Cramer's V	0.28	285
Ethnicity	Cramer's V	0.27	268
Age	Gamma	0.27	73
Group type	Cramer's V	0.25	293
Name	Cramer's V	0.20	298

Correlation Between the Number of Terrorists and Terrorism Incidents

It is reasonable to suggest that the more number of terrorists in an area lead to more terrorism in that area. This hypothesis is discussed by Lafree, Yang and Crenshaw (2009) where they indicates that more than 90% of the non-U.S. attacks were domestic (i.e., nationals from one country attacking targets of the same nationality in the same country). This idea could be used saying that terrorists of one area generally commit terrorism in the same area. With the data available in the current study and the data on incidents in the first paper, it is possible to have an idea about the relationship between the number of terrorists in an area and the amount of terrorism in that area. I found a correlation of about 0.9 indicating that the terrorists' number may be a strong predictor of the number of incidents.

CONCLUSION

Purpose of this study was threefold. First, I analyzed the personal, socioeconomic and demographic variables of arrested terrorists in Pakistan to identify their common characteristics. Second, I investigated the extent to which terrorists are just a cross-section of the society they belong to, and the extent they are different from the society. Lastly, I examined how terrorists belonging to different terrorist group types might differ in personal, socioeconomic and demographic characteristics. The overarching objective remains to locate the possible causes of people joining terrorist organizations.

After the univariate analysis of 2,344 arrested terrorists, some patterns have emerged. A bigger proportion of arrestees belong to religious families. Most of the terrorists' families' social, bravery and religiosity status determined by their castes is medium. Pashtun is the dominant ethnicity in the arrestees, and Deobandi is the sect in religious terrorists. Most have urban origins and are relatively poor. The majority of terrorists belong to organizations of the type, Sectarian and Muslim militants. Divided on district basis, the bigger proportion belongs to Karachi and most of them were arrested in Karachi. The majority of religious terrorists are madrasa educated, married, employed, weapon trained and have between 9 to 12 years of schooling. Except for four arrestees, all are male. Terrorists' age ranges from 16 to 60, averaging 30 years. The average number of their siblings is 4.5, and the average number of their children is approximately 3. The number of terrorism cases against arrestees varied from 1 to 40 and averaged 3.

In certain respects, terrorists are just the reflection of the Pakistani society, there is nothing distinctly different from general population patterns about their backgrounds. For example most of the Pakistanis have religious orientation, and they are particularly conscious of their sects. Financially most Pakistanis are poor, as are the terrorists. On married to single ratio they are reflective of the Pakistani society overall. The aspects on which terrorists differ from Pakistani society in general include their primarily urban composition and educational levels. In Pakistan, rural population is in majority while in terrorists urban portion is dominating. In Pakistan, people educated from years 1 to 8 are in the biggest portion, while in the terrorist community people with education levels 9 to 12 years are in majority.

Bivariate analyses show that terrorist group types differ significantly on ethnicity, weapon training, age, urban rural dimension, and family background of bravery, educational attainment, the number of cases of terrorism, marital status, name and sect. The characteristic on which terrorist groups do not differ from each other is their social status; members of all groups generally have the same medium social status in Pakistani society. The number of siblings, children, and cases has shown group differences but their number reported in the data is too low to make results reliable.

This study corroborates the findings of the Asal et al. (2008) study in one respect. The terrorists do not belong to the comparatively richer sections of Pakistani society. But it differs with Asal et al. (2008) study' conclusion that sect does not matter and most of the terrorists are unemployed. The current study concludes that sect is a strong predictor of one's group affiliation. Second, that most of the religious terrorists are employed.

To a large extent, this study supports the findings of earlier international studies that profiling might be a fruitless exercise in one respect. Terrorist groups in this study differ on at least 10 dimensions. Two characteristics which all the terrorist groups shared include the social and financial status of their members. However, generally they are “unremarkable”. The terrorists seem to reflect the circumstances under which they live; their times, their geography, ideology of their group.

Perhaps, the better way is to go a little deeper to try to understand terrorists at homogenous levels: terrorists’ group types, time periods, geography, and particular movements. It is also desirable to investigate at multivariate levels as to what predicts terrorists’ group affiliations. Another research question worth investigating is what determines the number of cases against a particular terrorist. Testing LaFree, Yang and Crenshaw’s (2009) hypothesis about the relationship between the number of terrorists and incidents is expected to be a worthwhile exercise.

Theoretical contribution of the current study is its highlighting the importance of conflict. Majority of terrorists belong to conflict areas. Without exception, all of them have some ideology to fight for—religious, sectarian, ethnic and Pan-Islamism. The study also contributes to the debate that a profile of terrorists is not possible as such. The study enhances our understanding of the terrorism dynamics in Pakistan. One policy implications is that the government of Pakistan should try to resolve the conflicts, as much as possible. All ideologies create boundaries, some more than the others. Role of the policy makers is to promote tolerance. Law enforcement practitioners have many leads to pick from this study. First, they would know the problem areas to focus their

resources on. One problem identified through this study is the lack of sufficient data to reach at certain conclusions with confidence. Practitioners may want to standardize their data collection for further research.

In short, this study is the first large-scale systematic analysis of socioeconomic, demographic and personal characteristics of arrested terrorists in Pakistan. Although the study seems to concur with many international studies that terrorist profiling is a *mission impossible*, it has tried to salvage what was possible. At the least it has improved our understanding of terrorist community in Pakistan and has opened many avenues for further research.

PAPER 3

THE IMPACT OF TERRORIST ARRESTS ON TERRORISM:

DEFIANCE, DETERRENCE, OR IRRELEVANCE

In the aftermath of a terrorism incident, the immediate urge, most often, is to ‘capture or kill’ the terrorists involved in the attack. It is considered important both to initiate the process of criminal justice and to serve as a preventive measure to thwart future attacks. Whether arrests or killings really prevent further attacks, in fact, remains an issue seldom explored quantitatively. Despite some commendable research on what deters terrorists, we still don’t know if their arrests or killings reduce, increase, or show no effect on future terrorism. Terrorists are a unique type of criminals and as such are most likely to show a different reaction to their arrests and killings as compared to criminals in general. Their reactions to government sanctions (arrests) may not only differ from criminals but among themselves too, because of heterogeneity in arrests “caused by offender types, offense types, social settings, and level of analysis” (Sherman, 1993). For example, the arrested terrorists may be hardcore or peripheral, and their arrests may have been executed through usual police procedures or through killings when they resist usual arrest procedures. We should disaggregate these two kinds of arrests, since they might have opposite effects on incidence and seriousness of terrorism, leading to mutual cancellation of effects. This paper, using Sherman’s theory of defiance (1993), clusters arrested terrorists into two homogenous groups—hardcore and peripheral—and studies differential impacts of their arrests on incidence and seriousness of terrorism in the future. In addition, it studies the diversity of effects caused by the mode of arrest

made—ordinary arrest or arrest by killing. So, the study uses two outcomes (incidence and seriousness) and five predictors (all arrests, hardcore, peripheral, ordinary arrests and killings).

The available deterrence research on terrorism generally tests hypotheses about the deterrent effect of metal detectors, police and military expenditures, UN conventions and resolutions, military raids, targeted assassinations, and preemptive attacks. Only two studies (Landes, 1978; Dugan, LaFree, and Piquero, 2005) examine the effect of apprehension of arrests on airline hijackings. Indeed, the Campbell Systematic Review on Terrorism (Lum, Kennedy, and Sherley, 2006) report that out of more than 20,000 studies on terrorism, only 150 are empirical. And out of those 150 only one is about the relationship between arrests and terrorism. Hence, deterrence research on terrorism suffers from a clear gap: The impact of terrorist arrests on terrorism has not been studied with enough details to make any generalizations. Clearly, a research study is needed to discern the effects of arrests on incidence and seriousness of terrorism, taking into account the diversity of terrorist types and mode of their arrests.

THE CONTEXT—SECTARIAN TERRORISM IN THE PUNJAB, PAKISTAN

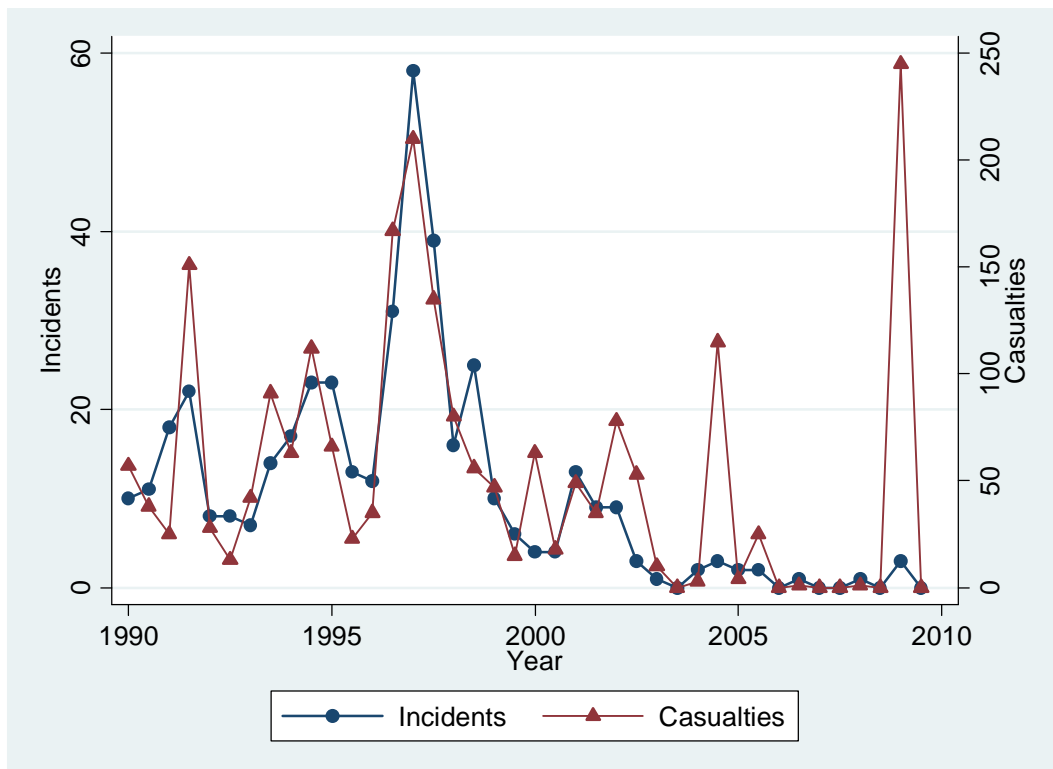
The Punjab is a most suitable place in Pakistan to study the possible relationship between arrests and terrorism for theoretical, practical, and methodological reasons. The Punjab is the most populous province of Pakistan, with an estimated population of 81 million and an area of 205, 344 square km. The major religious groups are Shias 20% and Sunnis 80% (Nasr, 2002: 86). Traditional Shia-Sunni differences were intensified after

1979 because of two factors: the Iranian Revolution (1979) and the Afghan Jihad (1979) against the Soviet Union. After the Iranian Revolution, with Iranian support, Shias formed Tehrik-Nifaz-Fiqah-Jaferia (Movement for the enforcement of Shia Jurisprudence) later named as Tehrik-e-Jafaria Pakistan (TJP)—Movement of Shias of Pakistan. Shias laid siege to Islamabad, the capital of Pakistan, against the *Zakat and Usher Ordinance 1980* (Islamic tax law) enforced by General Zia-ul-Haque—a military dictator attempting to Islamize Pakistan. General Zia, pressurized, accepted the Shia demand for exemption from the ordinance. However, to counter the Shia rise, General Zia-ul-Haque helped form a Deobandi organization, Anjman-e-Sipah-e-Sahaba (Haqqani, 2006), later named Sipah-e-Sahaba Pakistan (SSP)—army of companions of the Prophet. Further complexity was added by the Iran-Iraq war of the 1980's; parties to the war made Pakistan a proxy theater (Fair, 2004: 104). The SSP was funded by the Saudi Arabia and Iraq (Stern, 2000: 124), and by the U.S. (Barshied, 2005; Abbas, 2005), making it a “cash rich organization” (Kamran, 2008: 80).

Until 1989, clashes between the groups remained confined to firebrand speeches and assassination of prominent Shias such as the first two presidents of the TJP. In 1990, the founder of the SSP was murdered in the city of Jhang, not exactly by Shias but by a local political rival Sheikh family. But this murder was blamed on the Iranian diplomat Sadiq Ganji, and the local Shias. Ultimately, Ganji was also murdered in 1990 in Lahore, the capital of the province of Punjab. As the momentum of clashes increased, the TJP, in 1994, gave birth to a more militant splinter group Sipah-e-Muhammad Pakistan (SMP)—army of prophet Muhammad, as did the SSP in 1996, to Lashkar-e-Jhangvi (LeJ)—army

of Jhangvi, the founder of the SSP. The TJP/SMP and the SSP/LJ targeted people from the other sect and the government officials whom they resented. The SSP/LJ killed Iranian diplomats on two occasions. Four hundred and twenty eight terrorism incidents took place from 1990 to 2009, with 2067 casualties (people killed and wounded). The worst year was 1997, with 97 incidents and 345 casualties. Attacks consisted of targeted killings (368 attacks) of prominent individuals or mass killings (60 attacks) in religious gatherings. There were 26 cases of explosive use, including suicide attacks, and 402 of firearms, mostly committed with AK-47 rifles. Figure 1 presents a graph of sectarian incidents and casualties on a half-year basis.

Figure 1. Sectarian Incidents and Casualties in Punjab (1990-2009)



Initially, the government responded, using the existing police force to arrest and prosecute the accused. But when the problem spread beyond Jhang, the city of its birthplace, the government set up a provincial Criminal Investigation Department (CID) in February 1995, with a mandate to collect, analyze, and disseminate intelligence on sectarian terrorism, and further to arrest and interrogate the arrested terrorists. Between 1990 and 2009, the police arrested 615 terrorists and killed 70 while apprehending them.

The theoretical, methodological, and practical reasons for choosing Punjab for the study will become clearer in the methodology section, but a few points are mentioned here. First, the Punjab is the birth place of sectarian terrorism and it remained a Punjabi problem, at least until 1996. It spread to the other parts of Pakistan later. Second, the Punjab experienced terrorism across the province, whereas in the other provinces, it was confined only to major cities like Quetta, Karachi, and D.I. Khan. As a methodological necessity, it was easier to make cross-sections (8 regions) here with expected probabilities of terrorism events. Third, the Punjab CID collected data from 1990 to 2009, and it is reliable and sufficient to make statistical inferences. In the other provinces, except for NWFP, the CID's were established at a later stage and they have data for only a limited number of years. Fourth, identifying an incident as sectarian is comparatively easier in the Punjab than in the other provinces of Pakistan. In other provinces, the sectarian incidents are sometimes indistinguishable from the incidents of tribal feuds or language-based violence. Lastly, being resident of the Punjab and having served in the Punjab Police for almost 12 years, I have particular insight into the dynamics of sectarian terrorism here.

LITERATURE REVIEW

In the following section, I review some of the theoretical bases for examining the effects of arrests on terrorism.

DETERRENCE RESEARCH

Deterrence research is primarily based on the ideas of Cesare Beccaria (1738-1794) and Jeremy Bentham (1748 –1832). They believed that criminal decisions were based on a few simple factors: humans have free will; humans are rational creatures; and humans are able to weigh the prospective outcomes of their actions. The resultant theory of deterrence postulates that offenders are rational actors who seek to minimize costs and maximize benefits. Utilitarianism, as advanced by Bentham, proposes that as the individuals act in their own self-interest, effective punishments will deter them from engaging in specific actions that serve their self-interest. The deterrence perspective maintains that an individual's propensity to engage in violence or crime, including terrorism can be altered by the actions of the government (LaFree, Dugan, and Korte, 2009). Deterrence theory suggests that government intervention—for example arrest—will decrease terrorism by increasing *fear* caused by the threat or imposition of punishment.

I divide empirical research studies based on deterrence theory into two categories: terrorism studies, and crime studies. Terrorism studies focus on the impact of different counterterrorism strategies on terrorism. Counterterrorism studies have explored the

effects of metal detectors (Cauley and Im, 1988; Enders, Sandlers, and Cauley, 1990; Enders and Sandlers, 1993, 2000), the probability of apprehension, the conditional probability of incarceration, and sentences (Landes, 1978), police and military expenditures (Barros, 2003), UN conventions and resolutions (Cauley and Im, 1988; Enders, Sandlers and Cauley, 1990; Enders and Sandlers, 1993), military raids (Brophy-Baermann and Conybeare, 1994; Enders, Sandlers, 2000, Nevin, 2003), and preemptive attacks (Sheehan, 2006). Criminologists Dugan, LaFree, and Piquero (2005) estimated the deterrent impact of several certainty-based and severity-based counter hijacking strategies on the likelihood of differently motivated hijacking events. They found support for deterrence caused by certainty of apprehension.

The results of these studies are mixed. The effects of the probability of apprehension, large police expenditures, and metal detectors all support the deterrence model; UN conventions show no effect; and preemptive raids and political efforts seem to increase terrorist incidents. In short, the existing studies are not about the deterrent effect of arrests on terrorism with the exception of the studies on metal detectors, especially those of Landes (1978) and Dugan, LaFree, and Piquero (2005), which tell us that terrorists want to avoid arrest. But the variables used in these studies are not exactly ‘arrests’ –they are measures of the probability of detection.

But the second category of studies, addressing a parallel but broader question of whether arrests reduce *crime*, is more relevant to this study. Using a variety of ways to

operationalize the concepts of arrest and crime¹⁷, and using different datasets on a variety of offence categories, these studies offer several important findings helping us to understand the possible effect of arrests on terrorism. First, these studies demonstrate that the relationship between crime and arrests is two-way: crime impacts arrests (Decker and Kohfeld, 1986) and arrests deter crime (Chamlin et al., 1992; Cloninger and Sartorius, 1979; Levitt, 1998). Second, they show that the impact of number of incidents on the number of arrests is contemporaneous, but that the impact of arrests on the reported crime is typically lagged such that arrests affect crimes in the future (Levitt, 1998). The contemporaneous relationship between reported crime and arrests is positive but there is no feedback relationship evident in studies using official records that look at the number of crimes reported as an outcome and the frequency of arrest as predictor (D'Alessio and Stolzenberg, 1998). Third, research from the early 1970s suggests that the arrests must reach a certain critical level (tipping point) before they reduce crime (Tittle and Rowe, 1973) and that this tipping point is an attribute of smaller cities because the deterrent effect of arrest certainty is stronger in smaller cities and counties than in larger ones (Brown, 1978; Chamlin et al., 1992). Crime, especially terrorism, has cycles; incidents peak after some period of time (Im, Cauley, and Sandler, 1987) and then start falling sharply.

Studies generally are correlational in nature and time-series analysis seems to be

¹⁷Crime in general or of a specific nature like robbery, burglary, and larceny. Number of arrests and number of crime incidents in a raw form; or in terms of rates of arrests and rates of crime; or taking log of number of arrests and log of number of incidents.

the preferred way of studying this relationship over time. But within this generic statistical approach, techniques have been evolving to address deficits of earlier methods. To discern the relationship between crime and arrests appropriately, these studies underscore the importance of aggregating crime data in proper time intervals (how much time does it take incidents to influence arrests and vice versa), using proper time lags, and selecting the proper level of aggregation.

In short, the missing topics from the above-described deterrence research include the relationship of terrorism and arrests and the differential effects of the heterogeneity present in arrests. The two categories of studies discussed above helped motivate the current study and its methodology.

BACKLASH RESEARCH

Although deterrence models have been applied to a wide variety of criminal behavior including terrorism, there is an influential group of researchers in terrorism studies, psychology, and criminology who do not agree with this model of deterrence. Instead, they believe that threat or punishment does not always reduce crime but may in some cases increase it. LaFree, Dugan, and Korte (2009) cite McCauley (2006), Nevin (2003) as terrorism scholars, Sherman (1993), Pridemore and Freilich (2007) as criminologists, and Brehem and Brehem (1981), and Tyler (1990) as psychologists who argue that backlash is the likely result in many cases. They cite many researchers including Collins, 2004, Geraghty, 2000, Kenny, 2003, Lichbach, 1987, Malvesti, 2002, Nevin, 2003, Soule, 1989, Turk, 2002, who agree that the imposition of harsh criminal

justice and the undertaking of military interventions to reduce terrorism may well be counterproductive given the studies testing deterrence theory with regard to terrorism often show null or negative effects.

An important study by criminologists deserves greater attention. LaFree, Dugan, and Korte (2009) studied the impact of two criminal justice and four military strategies aimed at reducing political violence in Northern Ireland from 1969 to 1992 and found strong support for backlash models in five of six interventions. The two criminal justice interventions were “the internment” and “criminalization and Ulsterization.” During the internment, a total of 1,981 suspected terrorists were detained by the authorities. Criminalization revoked the special rights of the terrorists as political detainees and started treating them instead as ordinary criminals. The four military interventions were the Falls Curfew, Operation Motorman, and the Loughall and Gibraltar. The Falls Curfew was a 36-hour military curfew and search operation designed to locate IRA members and weapons stockpiles. Operation Motorman was a British military deployment of 30,000, aiming at eliminating “no go” areas in Londonderry and Belfast. Loughall and Gibraltar were incidents of targeted assassinations of terrorists. Except for the Operation Motorman, all the other strategies support the backlash perspective. Operation Motorman was followed by significant declines in the risk of new attacks. The results underscore the importance of considering the possibility that antiterrorist interventions might both increase and decrease subsequent violence. But they do not discuss conditions which might lead to positive or negative outcomes. These conditions are detailed in Sherman’s theory of defiance.

SHERMAN'S (1993) THEORY OF DEFIANCE

Sherman (1993: 445) claims that it is wrong to ask, “does punishment control crime?” because sanction effects vary widely depending on the type of offenders, offences, social settings, and level of analysis. According to him, a more useful question to ask is: “under what conditions does each type of sanctions reduce, increase, or have no effect on future crimes?” Sherman gives four necessary conditions under which sanctions will result in defiance: offender perceives criminal sanctions as unfair, offender defines sanctions as stigmatizing personae, offender is poorly bonded to punishing community or agent, and the offender refuses to accommodate shame.

Defiance is “the net increase in the prevalence, incidence, or seriousness of future offending against a sanctioning community caused by a proud, shameless reaction to the administration of a criminal sanction” (Sherman, 1993: 459). Defiance may be specific or general: specific defiance is by the individual punished and general defiance is the reaction of a group to the punishment of any of its members. Sherman (1993) adds another dimension of direct and indirect defiance. Defiance shown directly to the punishing agent is direct, while defiance shown to the community is indirect.

The theory of defiance states that there are four necessary conditions under which sanctions cause defiance, predicting an increase in the incidence or seriousness of future crime. Judged on these criteria, terrorists are more likely to meet these conditions as compared to common criminals. There is no study known to the author which establishes that terrorists really meet these conditions, a few examples which may lead us to assume so are narrated below.

Yousef Ramzi was tried in the U.S. District Court for the Southern District of New York during January 1998 and convicted of planning a terrorism plot. On the day of Ramzi's conviction, the judge Kevin Duffy remarked "You adored not Allah but the *evil* (emphasis added) you had become. I must say as *an apostle of evil* (emphasis added), you have been most effective." It is a good example of sanctions as stigmatizing personae. In response, the convict proclaimed: "Yes, I am a terrorist and *proud* (emphasis added) of it as long as it is against the U.S. government, and against Israel, because you are more than terrorists; you are the one who invented terrorism and using it every day. You are butchers, liars and hypocrites" (Tyre, 1998). Ramzi's example illustrates the three criteria of stigmatizing personae and the terrorists' refusal to accommodate shame, as well as their pride in what they do. Another example of pride is the wife of the suicide bomber who attacked Central Intelligence Agency agents in Afghanistan. She said: "I am proud of him, my husband has carried out a great operation in such a war. May God accept his martyrdom" (Hacauglu, 2010).

The above examples support assumptions in this study that terrorists are proud of what they do and that they refuse to accommodate shame. Even the governments' attitude towards them is that of stigmatizing. The direct evidence of the poor bond of the terrorists with the society (evidence of network ties as noted by R. Collins, personal communication, March 2, 2010) may be lacking. Arguably, the indirect evidence of their poor bond is strong enough to let us assume so. First, their being terrorists distances them from the society whom they have selected as victims. Second, the terrorists in this study have created their own society and culture based on sectarian beliefs and have created a strong sense of 'us' vs. 'them'. Their opponents are *kafirs* (infidels). Lastly, the terrorists

are poorly bonded to the punishing community or the government agents, as proved by their killing of many government functionaries and police officers. For example, they killed a former minister, Mohammad Siddique Kanju, and attacked Prime Minister Nawaz Sharif (who survived). They killed senior superintendents of police, Muhammad Ashraf Marth, (brother-in-law of Prime Minister, Chaudhry Shujaat Hussain), Ejaz Ahmed Langerial, and deputy superintendent Tariq Kamboh. This is just to name a few such incidents. These officers were killed because they had arrested and interrogated important terrorists. The presumption that the terrorists were poorly bonded to the community is supported by the fact that most of the terrorists, especially hardcore ones, were (proclaimed offenders) fugitives of law.

Under the strong presumption that the terrorists meet the four necessary conditions listed in defiance theory, I hypothesize that controlling for other variables, terrorist arrests are likely to be associated with an increase in the incidence or seriousness of terrorism in the future. But, as the terrorist organizations have hierarchies in which terrorists have different roles, a wide diversity in this effect is expected. The arrests of hardcore terrorists are likely to be linked with a greater increase in terrorism than the arrests of peripheral terrorists. Defiance theory also suggests differential impacts caused by the mode of arrests. Presumably, arrests executed through killings are likely to be perceived as more unfair compared to arrests made through the usual police procedures. Therefore, arrests made through killings of terrorists are likely to cause a greater increase in terrorism than arrests through ordinary means.

DATA AND METHODS

RESEARCH DESIGN

According to Sherman (1993: 467), the best test of defiance theory will be randomized experiments. However, in the context of the present study this design may not be feasible, because terrorists could not be randomized to be arrested or subjected to some alternative condition. An alternative design mentioned by Sherman (1993) was the longitudinal cohort design, mainly meant for studying specific deterrence. To study general defiance, I use cross-sectional time series (panel design) commonly used in economics to study the effects of policy shifts on changes in outcomes over time. According to Allison (2005: 2), “using fixed-effects methods, it is possible to control for all possible characteristics of the individuals in the study—even without measuring them—so long as those characteristics do not change over time.” By using this design, Allison (2005) claims that we can get closer to the benefits of randomized experiments even with non-experimental data, if the data are cross-sectional time series. And there should be no important omitted variable bias that is correlated with shifts in the outcome over time.

DATA

To test my hypotheses, I use data from January 1990 to December 2009 from the province of Punjab in Pakistan collected by the CID¹⁸.

VARIABLES

Terrorism, Terrorism Incidents, and Terrorism Seriousness

Terrorism is defined as “the threatened or actual use of illegal force and violence by a non state actor to attain a political, economic, religious or social goal through fear, coercion or intimidation” (LaFree and Dugan, 2007: 184). For the specific purposes of this paper, in the context of sectarian terrorism, I take a terrorist incident as an incident in which unlawful use or threatened use of force is committed by a sectarian group against the other sect for their differences in religious ideology or against the law enforcement agency for its actions against the terrorists. The intention is to intimidate or coerce them. I include successful incidents (in which somebody was killed or wounded) only. Defiance theory postulates that defiance may increase the incidence or seriousness of future crime,

¹⁸ Police data sources generally have reliability problems, because many researchers have confirmed the underreporting of crime. But research finds that underreporting is mostly for the minor offences. In case of serious offences, Cloning and Sartorius (1979) found that underreporting was not a serious issue. They considered for their analysis two crimes—homicide and auto theft—primarily because being serious offences, these crimes showed no appreciable reporting errors in national surveys. LaFree (1999) quotes Gove et al. (1985) and O’Brien (1996) reporting that data are probably most accurate for murder and robbery, two serious offences. In case of the terrorist incidents, I argue that non-reporting of incidents is nearly impossible because of the sensitivity of the incidents, their sensational nature, and proactive behavior of the affected religious organizations. So, for all practical purposes, incidents are reported consistently.

and therefore, for the purpose of this study, I measure terrorism in two ways: by counting the number of terrorism incidents and by counting the number of casualties¹⁹.

Terrorist Arrests

Arrest is defined as the taking or detaining in custody by authority of law (Gove and Merriam-Webster, 2002), especially in response to a criminal charge. The date of arrest is not the date on which terrorists are officially declared to be arrested but the date on which they actually came into custody of the law enforcement agency and lost their freedom of action. Arrests on criminal charges are included, but preventative arrests are excluded. Sometimes, in the process of arrest, terrorists are killed while violently resisting the arrest. I count these killings as a form of arrest because of two reasons. First, Pakistani law considers killings during arrest a form of arrest, and second, the terrorists are not alive to commit more terrorism. Thus, killings have a substantial impact on future terrorism. Generally, the terrorists are involved in more than one incident of terrorism and in different regions of the Punjab. Once arrested in one region, the same arrest date is recorded in the other regions where that terrorist was wanted for terrorism cases. As a

¹⁹ Because of three reasons, I use casualties as a measure of seriousness instead of the casualties per incident. 1) It is more intuitive to count total casualties than to count casualties per incident. If it can be an indication of terrorists' intentions, then they would be more concerned about increasing the number of casualties in a time frame than to be intentionally counting the number of casualties per incident. 2) Poisson models predicting casualties and casualties per incident are exactly the same except for one thing. In model predicting casualties incidents are a predictor variable and population is exposure. But in the model predicting casualties per incident, the predictors remain the same including incidents because outcome variable is still the same as in case of casualties, only it has been offset by incidents. According to MacDonald and Lattimore (2010), a predictor cannot be an offset variable. 3) Hoffman (2006: 86) mentions the number of casualties as a measure of seriousness.

result, the number of terrorists is fewer and the number of arrests is greater.

Terrorist Types

Fraser and Fulton (1984) posit that terrorist groups have four levels of hierarchy: command, active cadre (people actually carrying out terrorist activity), active supporters, and passive supporters. In the case of the Shia-Sunni organizations I study, the hierarchy is almost the same but with a slight difference. The commanders are active cadres too, and the passive supporters do not count because they are not the arrestees. Therefore, I categorize terrorists as hardcore or peripheral. Hardcore terrorists are the terrorists who have some leadership role in their organization, have participated in more acts of terrorism than the others, or are involved in high profile cases. Generally the government fixed a bounty (known as “head money” in Pakistan) for the arrest of hardcore terrorists. Peripheral terrorists are those who were involved in minor cases, played support roles, or have committed few acts of terrorism. Sherman (1993) quoted Hood and Spinks as saying that contradictory effects in heterogeneous samples cancel each other out. The division of arrested terrorists into two terrorist types makes the two resultant groups comparatively homogenous and reduces the chances of an aggregation bias that can occur with heterogeneous samples.

Control Variables

Localized Conflict. Sectarian terrorism in the early years of 1990s was mostly confined to the city of Jhang where the SSP had its headquarters. Then the SMP established its

headquarters in Lahore in 1994. Both of these periods when the SSP was operating from Jhang and the SMP from Lahore are likely to have different effects on the course of terrorism in Punjab. To control for this differential effect, Localized Conflict as a dummy variable has been included as a control measure.

Type of Weapon. Sectarian terrorists in the Punjab have used many types of weapons—blunt, firearms, or explosives. As the number of casualties in an incident depends greatly on the type of weapon, in the model predicting casualties (to be discussed later), I use type of weapon as a control variable.

Type of Target. It is just not the type of weapon which determines the number of casualties; it is also the attack type—assassination or mass killing. A dummy variable of whether it was targeted assassination or a case of mass killing is included in models predicting casualties.

Interaction of Target Type and Weapon Type. An AK-47 rifle used for the assassination of a single person would produce fewer casualties as compared to an incident in which the same rifle was used on a mob. So it is just not the target type alone or the weapon alone which actually predicts casualties, it is their interaction. Therefore, I have included an interaction term of weapon types and target types²⁰.

²⁰Some variables (Specialized Hardliner Groups, 9/11, and leader killed) were supposed to influence the events of sectarian terrorism. They were included in the regressions as dummy variables but did not show significant effect. Perhaps time dummies have served as proxies for these effects since they were introduced during different time stages where terrorism was evolving. So, they were dropped from analysis.

Population. To convert the counts to rates of terrorism per population, I use population as an exposure variable.

The descriptive statistics of outcome variables (incidents, casualties) and their likely predictors are shown in table 1. The data were aggregated on half-yearly basis for eight regions²¹. The table shows that the mean of incidents in a region for six months is 1.34 with a standard deviation of 2.76. The minimum and the maximum values are 0 and 24 respectively. The mean of casualties is 6.46 with a standard deviation of 16.87, and the minimum and the maximum values are 0 and 142 respectively. The mean of population is 8.80 million with a standard deviation of 3.13. The statistics of mean, standard deviation, the minimum, and the maximum, show that the data as counts are skewed to the right. Following convention, the Poisson distribution was used to model these counts. The predictor variable of interest (arrests) is also skewed to the right with a mean of 2.77 and a standard deviation of 4.39, with the minimum and maximum values of 0 and 26 respectively. The dispersion in incidents and arrests shows that arrests have the potential to explain the variation in incidents. Whereas variance in casualties is almost 40 times the mean indicating that some variable in addition to the arrests is needed to account for that dispersion. Table 1 also provides summary statistics for ordinary arrests and killings, and hardcore arrests and peripheral arrests.

²¹ The Punjab traditionally has eight regions (Lahore, Faisalabad, Multan, Bahawalpur, D.G. Khan, Rawalpindi, Gujranwala, and Sargodha) each headed by a deputy inspector general. Regions are further subdivided into districts having police stations ranging in number from 10 to 100 plus.

Table 1. Descriptive Statistics of Incidents, Casualties, and their likely Predictors

Variable	Mean	Standard Deviation	N	Sum	Minimum	Maximum
Dependent variables						
Incidents	1.3375	2.764276	312	428	0	24
Casualties	6.459375	16.86843	312	2067	0	142
Exposure						
Population (million)	8.795625	3.12895	312	28146	3.5	16.6
Predictors						
Arrests all types	2.771875	4.385194	312	887	0	26
Arrests Hardcore	.83125	1.644681	312	266	0	12
Arrests Peripheral	1.6375	3.156299	312	524	0	21
Arrests ordinary	2.46875	4.103553	312	790	0	26
Killings	.303125	1.096585	312	97	0	9
Firearms	1.253125	2.656097	312	401	0	23
Explosions	.084375	.3392869	312	27	0	3
Localized conflict	.0625	.2424406	312	20	0	1

STATISTICAL ANALYSES

Spatial Aggregations

Earlier studies on deterrence concluded that the results were sensitive to the levels of spatial aggregation used (Chamlin et al., 1992). Greenberg, Kessler, and Logan (1981) found evidence for bias in the state estimates. They preferred city instead of state as an aggregation level because the mutual influence of crime rates and sanction levels were more likely to occur at the city rather than the state level. They believed that the heterogeneity of bigger units like states made them unfit as a proper unit for analysis in deterrence studies. I have chosen a police region as the unit of analysis for four important reasons. First, each police region is 1/8th of the Punjab, having a separate police administration, and a generally homogenous culture with a standard set of practices for effecting arrests. Second, most of the terrorists worked in cells having police regions as their area of operations, making it easy to know the effect of their arrests on terrorism in that area. Third, if data were aggregated at the province level, there would be no panel data possible as n would be one. Finally, if data were aggregated at the district level, n would be 36, but many districts will be without incidents. To make panels possible, according to Allison (2009), there should be at least two different values for a panel.

Temporal Aggregation

To properly discern the nature of the relationship between crime and arrests, researchers have recommended that we aggregate crime and arrest data in proper time intervals. In deterrence research, for the first time, temporal aggregation bias was noted

by Greenberg, Kessler, and Logan (1981). Barros (2003) warned that time aggregation may blur the lag structure and thus make causal interpretation impossible. Chamlin et al. (1992) questioned the validity of panel designs of yearly lags and yearly aggregations of arrests and crimes in macro-level research.

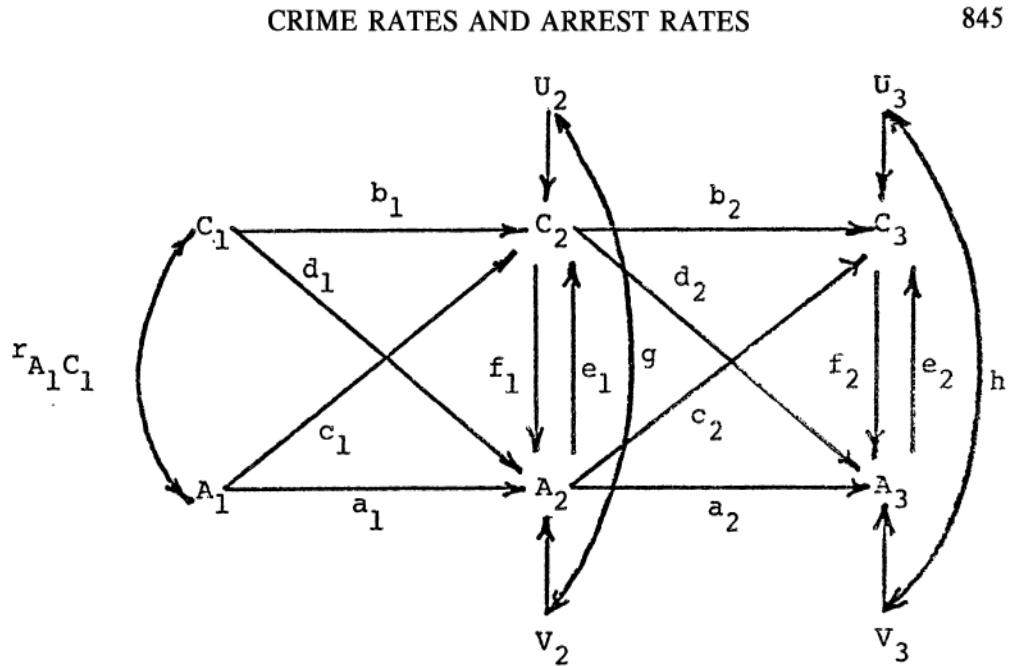
I aggregate data at half-yearly levels for three reasons. First, terrorism is a rare event and data aggregated at monthly and quarterly levels show 84.90 % and 68.41% zeros, respectively, making data analysis imprecise and unstable. Data aggregated at half-yearly basis show reasonable percentage of zeros (55.63%). Second, a half-year should be enough time for terrorist organizations to respond to arrests of their members, making any effect discernable. Lastly, data aggregated on a half-year basis will give statistical power to hypothesis tests because they will have sufficient time periods (T).

Model Specification Issues

A best graphical illustration of possible relations between crime (in our case terrorism) and arrests is presented by Greenberg, Kessler, and Logan (1979: 845). According to their illustration, per capita crime rates at time t are determined by crime rates at time $t-1$ and arrests at time t and $t-1$. It is not only arrests determining crime rates but also crime rates at times t and $t-1$ determining arrests at time t . They have presented a three-wave two variable model. “Lower case letters represent standardized regression coefficients and correlations among residuals”. Whereas the capital letters stand for variables: C for crime rates, A for arrest rates (clearance rates), U and V for residuals for

the crime rate and clearance rate at time t, respectively. For the purposes of this study, I am particularly interested in C2 in figure 2.

Figure 2. Greenberg, Kessler, and Logan's (1979) Illustration of Relationship between Crime Rates and Arrest Rates



^a Lower case letters represent standardized regression coefficients and correlations among residuals.
Figure 1. Three Wave, Two-Variable Panel Model for Crime Rates and Clearance Rates^a

The Poisson regression model can be expressed as the logarithm of the expected count outcome according to the following form:

$$\log (E(\mu|\lambda)) = \alpha + x'\beta \tag{1}$$

In Equation 1, the expected average count of terrorism, μ , conditioned on λ is denoted by $(E(\mu|\lambda))$, which is a function of the intercept (α) plus a set of linear predictor variables

(X'). To make this generic formulation of the Poisson model specific to variables in this paper, the model can be rewritten in a modified form in equations 2 and 3:

$$\log (E(\lambda_i=\text{terrorist incidents})) = \alpha + y_{it-1} + A_{it}\beta + A_{it-1}\beta + R_i\beta_{\text{Region}} + T_i\beta_{\text{Time}} + \beta_{\text{CONTROLS}} \quad (2)$$

$$\log (E(\lambda_i=\text{casualties})) = \alpha + y_{it-1} + A_{it}\beta + A_{it-1}\beta + R_i\beta_{\text{Region}} + T_i\beta_{\text{Time}} + \beta_{\text{CONTROLS}} \quad (3)$$

In Poisson regression, the rate is estimated by adding (log*exposure) to the right-hand side of the equation, with the parameter estimate constrained to equal 1. The ‘y’ denotes the expected count of terrorism events in equation (2) and the expected count of casualties in equation (3). That half-year, α is the intercept, A is the number of terrorist arrests, β is the effect on terrorist events, t-1 shows the lagged variable, and R is the police region having K-1 dummies for the K regions. β_{Region} is a vector of the fixed-effects of each of these regions. T represents time having T-1 dummies to control for various time effects and to serve as a proxy for some unmeasured time stable variables. β_{Time} is a vector of the effects of each of these time dummies. To maximize confidence in the results, I sought to control for a variety of competing explanations and hence have included some controls. I assume that a significant increase in the number of terrorism incidents/casualties is consistent with a defiance effect, and that a significant decrease is consistent with a deterrence model. A null effect suggests that no relationship exists.

Model Estimation Issues

To estimate this model, I conducted some preliminary analyses using STATA version 10. The first analysis was of within and between variation in outcome and predictor variables. The results are given in Appendix 1. The most important finding from this summary is that for all variables, within variation (across time) is much higher than the between variation (across regions) suggesting the suitability of fixed effects models. This is important because in the fixed-effects models “the coefficient of a regressor with little within variation will be imprecisely estimated and will not be identified if there is no within variation at all”(Cameron and Trivedi, 2009: 238). To handle the individual fixed-effects for regions, I included dummy variables for each region. This technique assists in controlling for unobserved heterogeneity when this heterogeneity is constant over time and correlated with independent variables²².

To control for time trends, seasonal variation, and to serve as a proxy for variables changing slowly but not explicitly measured, I used time dummy variables to control for long term time trends.

²² However, it is much difficult to assume that heterogeneity is constant over time or in Allison’s words (2005: 2) characteristics of the regions do not change over time once the data are for twenty years as in the present study. However, there are remedies. First, it is advisable to include some predictors which may be causing between-variation. Second, dependent variable lags may be included in the model. Putting lagged dependent variable in the model brings in the correlates from the previous year. Where, a stronger correlation between the dependent variable and its lag shows that previous dynamics of the phenomenon are continuing over time. I used both these techniques. Third, panel design primarily was developed for data when regions are greater in number than the time periods. However, the use of long panels (cross-sectional time series) with fixed effects is very common. It’s becoming popular even in many disciplines and Cameron and Trivedi (2009) have discussed them separately, although in a summarized form.

Earlier studies have mentioned the simultaneity of relationship between crime rates and arrest rates. There is a strong possibility of this simultaneous relationship between terrorism incidents and arrests. To reduce this potential source of endogeneity and assess the impact of arrests on terrorism incident rates, I used a structural equation model (control function) approach as described by Cameron and Trivedi (2009: 593-595) using establishment of the CID as an instrumental variable. The CID has a correlation of 0.3148 with arrests but only -0.1098 with incidents. The CID was a direct response to increase the probability of arresting terrorists. However, the CID has no direct bearing on the incidents of terrorism, but does have effects on the arrests of terrorists. Therefore, I considered it a valid instrument to use, though it is exactly identified and cannot be tested against other potential instruments. The results of the two-step estimation are given in appendix 2. The results show the coefficient for residual (ρ_{puhat}) as 0.00979 with a p-value of 0.852 indicating no difference between regression with instrumental variable and without it. This suggests that either the feedback relationship is too weak to be detected or it has been removed with the use of lags of dependent and independent variables. Another possible explanation might be that as in “the fixed-effects models, individual specific effects are allowed to be correlated with the regressors x_{it} , this allows a limited form of endogeneity with the time invariant component of the error α_i ” (Cameron and Trivedi, 2009).

An important question to ask is what estimates of the standard errors to use when the number of regions is small and the number of time periods is large. Cameron and Trivedi (2009: 328) recommend using a heteroskedasticity and autocorrelation-consistent

estimate of the standard errors. Another complexity could be added by heterogeneity generated by spatial correlation of regions, because the regions are adjacent and not randomly sampled. But as the number of regions is just eight, it is possible to relax the assumption that μ_{it} is independent over i (Cameron and Trivedi, 2009: 267). Terrorism incidents being count show a standard deviation of 2.764276 as compared to mean of 1.3375. In the presence of significant over-dispersion, Berk and MacDonald (2008) advise looking for the sources of dispersion: omitted predictors, incorrect functional form specified, random variation in the conditional expectations, and dependence between the events. They also argued against opting for negative binomial, unless really needed. Cameron and Trivedi (2009: 561) recommend that instead of using negative binomial, one way to modeling is to use Poisson with robust standard errors, which I used.

Post Estimation Tests

Many alternative estimation methods are available and choosing between them involves trade-offs between fit, parsimony, and ease of interpretation. The criteria I used to assess my models included tests of omitted variables, goodness-of-fit, and squared correlation between observed and fitted values. I also checked whether results were also consistent with a priori expectations. Berk and MacDonald (2008: 272) state that if the “model is on sound footing, the conditional expectations estimated by the fitted values will be the same as the residual variances around those fitted values, save for random error introduced by the Poisson process itself.” In other words, “what one wants to see is whether the estimated mean from the regression model equals the variance” (MacDonald

and Lattimore, 2010). However, the assumption that the conditional mean and variance are equal is rarely met with observational data in criminology.

RESULTS

I estimated eight fixed-effects Poisson regression models using regional dummies, time dummies, robust standard errors, and population as exposure variable. Eight models, are presented in table 2. The results of models through IV method and through usual procedure using arrests as predictor were similar. Therefore, I present and discuss results of six models estimated through usual Poisson regression for cross-sectional time series (panel) and include the results of estimates through IV method as appendix 2 and Appendix 3.

Table 2. Eight Estimated Models for Incidence and Seriousness of Terrorism

Incidence	Seriousness (casualties)
Incident rate on arrests through IV method	Casualty rate on arrests through IV method
Incident rate on arrests	Casualty rate on arrests
Incident rate on ordinary arrests vs. killings	Casualty rate on ordinary arrests vs. killings
Incident rate on hardcore vs. peripheral	Casualty rate on hardcore vs. peripheral

These are the models which have been found best fit through various post estimation procedures. Table 3 presents the results of three models predicting expected rates of

terrorism incidents per half year per million people. Table 4 presents the results of three models predicting casualties per incident with different operationalizations of arrests.

Poisson regression coefficients are not as straight to interpret as the ordinary least square regression coefficients are. We can interpret them in three ways: as a difference between the logs of expected counts, as incidence rate ratios, and as the marginal effects. I use incidence rate ratios approach as described by MacDonald and Lattimore (2010). This interpretation tells, to what percentage a predictor increase or decreases the expected count or incidence of crime; such that 1.7 would be interpreted as increasing the expected count by 70%, and 0.6 would be interpreted as reducing the expected count by 40% (MacDonald and Lattimore, 2010).

ARRESTS AND INCIDENCE OF TERRORISM

All Arrests

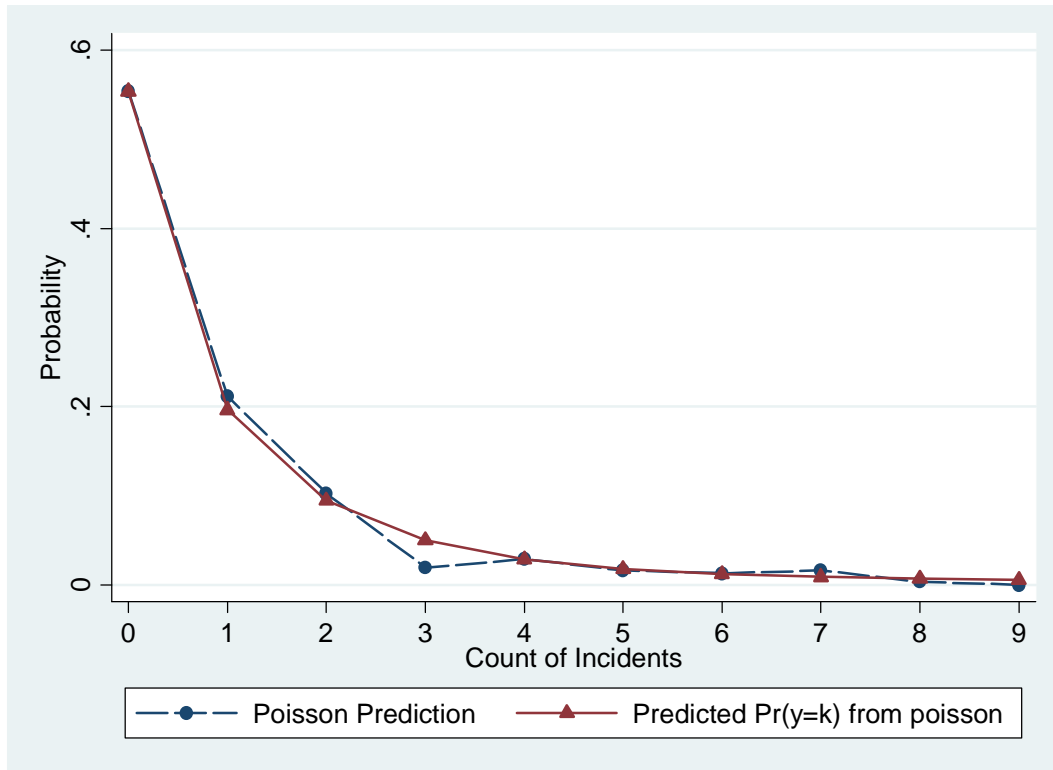
Model 1 in table 3 shows the relationship between incidents as outcome and arrests and lagged arrests as predictors. The coefficient of arrests of 1.066 indicates that one more arrest is associated with a 6.6% increase in the number of expected terrorism incidents. The coefficient of lagged arrests of .95 indicates that one more arrest in the prior period (previous six month) is associated with a 5.0% decrease in the number of expected terrorism incidents in the current period. In simple terms, controlling for prior period, the current level of terrorism are correlated positively with current arrest levels and negatively correlated with prior arrest levels. Coefficients estimated through two-

stage least square IV approach are almost equal to the coefficients estimated through simple Poisson regression: 0.064 for arrests and 0.050 for prior arrests and the coefficient of residual (*lpuhat*) is not significant, eliminating the need for IV approach in this case.

To assess goodness-of-fit of models estimated in this paper, I used four methods: comparison of predicted mean and the observed mean and comparison of their variances; R-Square of the model and the squared correlation of coefficient of observed and expected counts; Chi-Square goodness-of-fitness test with the null hypothesis that Poisson is the appropriate model; and the graph of predicted and observed probabilities of counts. In addition to the tests of fitness, I tested all the models for omitted variables using *linktest* described in STATA manual and multicollinearity using variance inflation factor (VIF).

For model 1 in table 3, predicted mean of 1.339786 is almost equal to the observed mean of 1.3375 suggesting a good fit. Variance of the predicted counts of 5.942232 is more than the predicted mean but it is reasonable. R-Squared is 0.54 and the squared correlation of coefficient between observed rates of incidents and expected is 0.77, which are quite high indicating a good fit of the model. On testing, goodness-of-fit likelihood ratio test is equal to 279.3891 on a chi-square distribution with a probability of 0.2199 confirms the null hypothesis that Poisson is an appropriate model here. The graph of predicted and observed probabilities of counts presented in figure 3 indicates that model fits the data well except for the count of 3.

Figure 3. The Observed and Predicted Probabilities of Counts of Incidents



Test for omitted variables suggests no omitted variable. In the test for multicollinearity, the VIF for various variables in this model are ≤ 3.5 which is acceptable because some authors consider a VIF of 10 (90% shared variation) as the upper limit, while others set the limit at a VIF of 4 (75% shared variance).

The results of this model support the hypothesis that controlling for other variables, the increased number of arrests are associated with a significant increase in the rate of terrorism incidents. The prior arrests are associated with a significant decrease in the rate of terrorism incidents.

Ordinary Arrests vs. Killings

Model 2 in table 3 shows the relationship of ordinary arrests and killings with terrorist incidents. The table also shows association of their priors with the current levels of incidents. The coefficient of ordinary arrests of 1.086 indicates that one more ordinary arrest is associated with a 8.6% increase in the expected number of terrorism incidents.

Table 3. Fixed-Effects Cross-Sectional Time Series Poisson Estimates of Impact of Terrorist Arrests on Terrorism Incidence

Incidents	Model 1		Model 2		Model 3	
	IRR	Robust Std. Err.	IRR	Robust Std. Err.	IRR	Robust Std. Err.
Arrests	1.066016***	.0183478				
L1.	.9514013**	.0183591				
Ordinary			1.086203***	.017762		
L1.			.9600003	.0210585		
Killings			.8466877	.0897299		
L1.			.8731503	.0766264		
Hardcore					1.102049***	.0298641
L1.					.9833673	.0343181
Peripheral					1.068208***	.0200394
L1.					.9440803*	.0258224
L.Incidents	1.050988	.0221694	1.041343	.0216949	1.049485	.0225141
Localized conflict	2.401983	.6105556	2.818199	.680039	2.620336	.652011
Faisalabad	1.697677	.3271494	1.595206	.3108642	1.632492	.314937

Multan	1.423785	.3527135	1.402608	.3513543	1.481895	.3893684
Bahawalpur	1.413175	.3518777	1.362337	.3465058	1.481176	.3778169
D.G. Khan	1.164425	.3442679	1.118804	.3225042	1.224964	.3568523
Rawalpindi	.9064685	.2522641	.7773355	.2161424	.9447363	.2669148
Gujranwala	.4876415	.1714124	.4716708	.1599997	.5229984	.1877464
Sargodha	.6666742	.2436704	.6490401	.2325938	.720228	.2670257
Population	<i>Exposure</i>					
N	312		312		312	
R2	0.5450		0.5536		0.5489	

NOTES: Time dummies included in regression but not shown in the table.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ stars only for relevant IRR

The exponential of the coefficient of killings, and lagged killings are not statistically significant at a significance level of $p < 0.05$. One possible explanation for the coefficients not turning out statistically significant could be stated as the *sparseness* of the predictor, killings. Killings are concentrated in a few years; one in 1991, one in 1992, eight in 1998, 42 in 1999, one in 2000, 33 in 2002, four in 2004, three in 2007, and three in 2008.

Assessment of the fitness of the model on various criteria produces the following results. R-Square of the model is 0.55 and the squared correlation between incidents and their expected values is .80 showing a high fit as substantiated by a formal goodness-of-fit test. The goodness-of-fit likelihood ratio equal to 267.3015 on a chi-square distribution with a probability of 0.3645, confirms the null hypothesis that Poisson is an appropriate model here. Another proof of goodness-of-fit may be that against an observed mean of

1.3375 and variance of 7.641223, mean of the expected values is 1.3397 and variance 6.009586.

Post estimation test of omitted variable indicate no omitted variable. Test for detecting multicollinearity produces the VIF levels for all variables ≤ 3.55 , showing absence of multicollinearity. The model is primarily geared to test the differential effects of ordinary arrests and killings, on the expected counts of terrorism incidents. Because the coefficient of killings is not statistically significant, its equivalency test with the ordinary arrests was not conducted.

Hardcore vs. Peripheral

Model 3 in table 3 shows the association of arrests of hardcore terrorists and arrests of peripheral terrorists with terrorist incidents. The table also shows association of their lags with the incidents in the current period. The exponential of the coefficient of hardcore arrests of 1.102 indicates that one more hardcore arrest is associated with a 10.2% increase in the expected number of terrorism incidents. The coefficient of arrests of peripheral terrorists of 1.068 indicates that one more peripheral arrest is associated with a 6.8% raise in the number of terrorism incidents. The coefficient of prior peripheral arrests of .944 shows that one more prior peripheral arrest is related to a 5.6% expected decrease in the number of terrorism incidents.

Goodness-of-fit test produces likelihood ratio of 273.8899 with a probability of 0.2651 on a chi-square distribution, suggesting a good fit. R-Square is 0.55 and the squared correlation between observed and expected values is .78443105. The predicted

mean and variance are 1.339697 and 7.641223 respectively against the observed mean of 1.3375 and variance 5.968196. All these tests show a good fit between the observed and the fitted counts. Test of omitted variable shows no omitted variable and the maximum VIF is 3.53 for any predictor, showing no problem of multicollinearity. Wald test of equivalency of coefficients of hardcore and peripheral arrests shows likelihood ratio of 0.88 with a probability of 0.3482 on chi-square distribution, supporting the null hypothesis of no difference.

To summarize the results of relationship between incidence of terrorism and arrests types and terrorist types, the current level of terrorism incidents are correlated positively with all arrests, hardcore arrests, peripheral arrests, and ordinary arrests while controlling for prior period and other variables. There is no differential effect of hardcore and peripheral arrests.

ARRESTS AND SERIOUSNESS OF TERRORISM

All Arrests

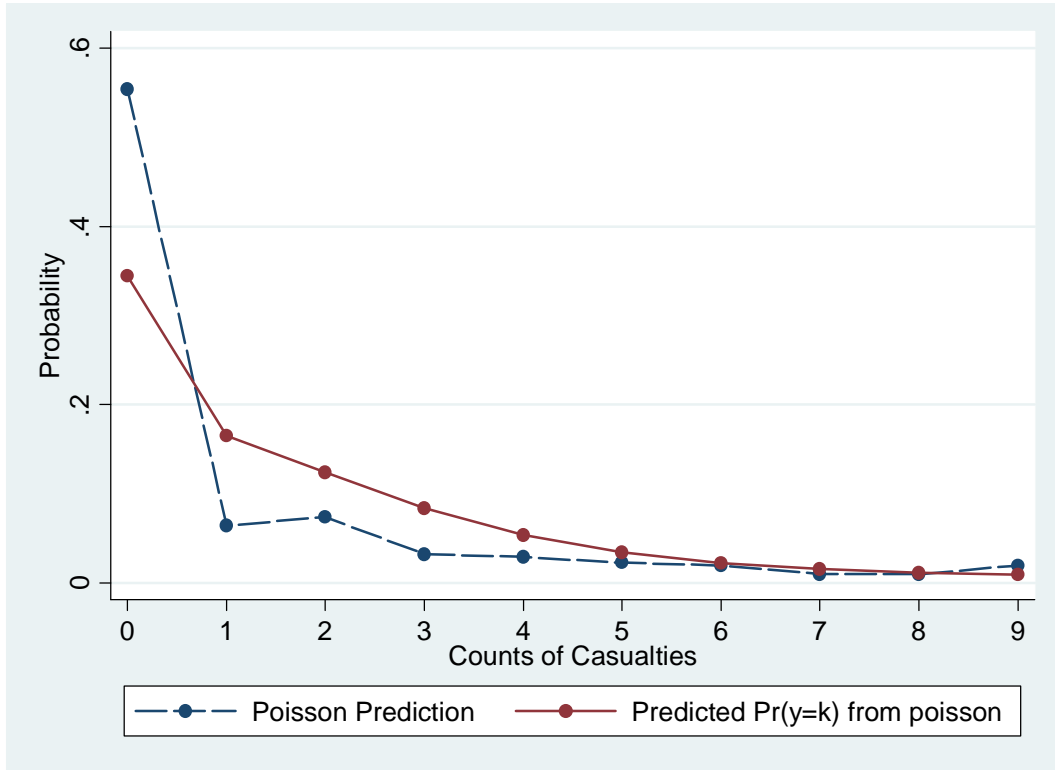
Model 1 in table 4 shows the relationship between casualties as outcome and arrests and lagged arrests as predictors. The exponential of the coefficient of arrests of 1.04 indicates that one more arrest is associated with a 4.0% increase in the expected number of casualties. The coefficient of lagged arrests of .97 indicates that one more prior arrest is associated with a 3.0% decrease in the number of casualties. In simple terms, controlling for prior period, the current level of casualties are correlated positively

with current arrest levels and negatively correlated with prior arrest levels. Coefficients estimated through two-stage least square IV approach are almost equal to the coefficients estimated through simple Poisson regression: 1.034 for arrests and 0.97 for prior arrests eliminating the need for IV approach in this case. Predicted mean of 6.459375 is almost equal to the observed mean of 6.44229 suggesting a good fit. Variance of the predicted counts of 284.5438 (286.4662 observed) is more than the predicted mean but it is reasonable in the presence of many sources of heterogeneity—spatial, temporal, weapon types, and attack types. R-Square of 0.79 and the squared correlation of coefficient between observed rates of casualties and expected is 0.92 which is quite high indicating a good fit of the model. On testing, goodness-of-fit likelihood ratio of 888.3089 with a probability of 0.0000 on chi-square distribution shows lack of fit. Figure 4, presenting graph of the observed and predicted probabilities of counts of casualties, supports the results of goodness-of-fitness test. However, because the observed mean and expected mean are equal, but the number of sources of heterogeneity is more as compared to the incidents, even the present fit is acceptable.

Test for omitted variable suggests some omitted variable, which might not be a serious problem because in criminology, it is hard to control all the variables, but results may still remain valid. The VIF levels for the predictors are not more than 3.43, indicating no problem of multicollinearity.

The results of this model support the hypothesis that controlling for other variables, the increased number of arrests are associated with a significant increase in the rate of casualties. This was what was predicted by the defiance theory (Sherman, 1993).

Figure 4. The Observed and Predicted Probabilities of Counts of Casualties



Ordinary Arrests vs. Killings

Model 2 in table 4 shows the relationship of ordinary arrests and arrests through killings with casualties. The table also shows association of their priors with casualties in the current period. The exponential of the coefficient of usual arrests of 1.043346 indicates that one more arrest through usual police procedures is associated with a 4.3% increase in the number of casualties.

Table 4. Fixed-Effects Cross-Sectional-Time-Series Poisson Estimates of Impact of Terrorist Arrests on Casualty Rate

Casualties	Model 1		Model 2		Model 3	
	IRR	Robust Std. Err.	IRR	Robust Std. Err.	IRR	Robust Std. Err.
Arrests	1.040559*	.0186113				
L1.	.9713416	.0177488				
Ordinary			1.043346*	.0224701		
L1.			.9745976	.0188003		
Killings			.980865	.0985799		
L1.			.9291487	.0851679		
Hardcore					1.221203**	.0482608
L1.					1.008772	.0297929
Peripheral					.9912978	.0202455
L1.					.9602945	.0234698
Explosion	1.77956	.2853521	1.842578	.2839595	1.781901	.2931834
Masskillings	7.967083	1.319296	7.934212	1.180756	7.753611	1.285478

L.Incidents	1.106992	.029130 7	1.111802	.027006 5	1.105708	.030552 4
Localized conflict	.7913891	.175085 5	.7611159	.173201 4	.8171355	.183314 4
Faisalabad	.8876634	.208025 9	.9410469	.172090 2	.8915402	.205347 2
Multan	.8415803	.186994 2	.8634653	.199465	.847005	.190788 1
Bahawalpur	1.306452	.363817 4	1.479601	.407211 2	1.294005	.358231 6
D.G. Khan	1.281137	.310458 2	1.291889	.307177 1	1.273417	.307424
Rawalpindi	1.403407	.336188 6	1.735565	.428563 5	1.345172	.355337 1
Gujranwala	.7638767	.216035 3	.8417158	.244104 6	.7517765	.217110 8
Sargodha	.9626048	.269911 3	1.145638	.327925 4	.9522645	.269549 2
Population	<i>Exposure</i>					
N	312		312		312	
R2	0.7940		0.8058		0.7944	

NOTES: Time dummies included in regression but not shown in the table.

* p < 0.05, ** p < 0.01, *** p < 0.001 stars only on relevant coefficients

The coefficients of lagged ordinary arrests, killings and lagged killings are not statistically significant at a significance level of 0.05. One possible explanation for coefficients of killings not being significant could be stated as the sparseness of the predictor killings as explained earlier. R-Square is 0.79 and the squared correlation between incidents and their expected values is =.92 showing a high fit but not

substantiated by a formal goodness of fit test showing goodness-of-fit likelihood ratio of 885.8593 of chi-square distribution with a probability of 0.0000. Against an observed mean of 6.459375 and variance of 284.5438, mean of the expected values is 6.442287 and variance 286.024. Test of omitted variable show the presence of some omitted variable but the VIF levels for all variables are below 3.50, negating the presence of a significant problem of multicollinearity.

Hardcore vs. Peripheral

Model 3 in table 4 shows the connection between arrests of hardcore terrorists and arrests of peripheral terrorists with casualties. The table also shows association of their lags with the incidents in the current period. The coefficient of hardcore arrests of 1.22 indicates that one more hardcore arrest is associated with a 22% increase in the rate of casualties. Goodness-of-fit likelihood ratio equal to 808.3898 on chi-square distribution with a probability equal to 0.0000, suggests a lack of fit. R-Square is 0.80 and the squared correlation between the observed and predicted counts of casualties is .93638573. The predicted mean and variance are 6.442308 and 287.5784 against the observed mean of 6.459375 and variance 284.5438, showing a good fit. As a test of multicollinearity, the maximum VIF for any predictor is 2.94, indicating absence thereof, of the problem of multicollinearity.

In sum, controlling for prior period, the current level of casualties are correlated positively with current arrests, hardcore arrests, and ordinary arrest levels and with all the other arrests types show no or statistically not significant relationship. The effect sizes for

all the arrest variables on casualties are weaker as compared to the effect sizes on incidents with the exception of hardcore arrests. It has the coefficient of 1.22 and that may be the reason for the other coefficients being weaker; may be it has sapped the impact of others. Only the hardcore arrests seem to be the major influence on casualties. The Wald test of no difference between hardcore and peripheral is rejected at likelihood ratio of 25.64 on chi-square distribution with a probability of 0.0000.

Before I actually proceed to the conclusion section, I feel an urge to discuss an important question: if these results could be given a causal interpretation. Literature discusses two criteria for causality: unbiasedness and unconfoundedness. While unbiasedness is achieved through randomized experiments, unconfoundedness could be reached at through different statistical methods. I would support a causal interpretation on the following five grounds eliminating confoundedness: common sense, use of fixed-effects methods, use of IV methods, use of time dummies, and explicit use of some controls. First, the IV methods have been well-recognized methods instrumental in the recovery of causal effects of interest. In this paper, IV method was applied and results were similar to the methods without IV leading us to believe that these relationships are not endogenous in the current structural equations. Second, the fixed effects model controls for time-stable unmeasured variables, making causal interpretation possible, assuming relevant predictor variables are included. Third, to control for some unmeasured time-variant variables, time dummies were used. Fourth, some of the control variables, which could be measured explicitly, were included in the regressions. Finally, the results are supported by common sense: terrorists, highly motivated as usually they

are, would like to pay in the same coin if they could, until overwhelmed by the government action beyond their expectations. These reasons enhance our confidence that the chances of confounding variables are minimized.

CONCLUSION

The current study tested Sherman's (1993) defiance theory by examining the effects of arrests on the incidence and seriousness of terrorism in the Punjab province of Pakistan. Fluctuation of the incidence and seriousness of terrorism in eight police regions over 20 year are explained by the changes in the number of arrests, after controlling for other variables. Assuming that terrorists meet defiance theory's four necessary conditions, the likelihood was strong that their arrests would induce defiance in general, instead of inducing deterrence. In addition to testing the impact of arrests in general, I separated the arrests into hardcore vs. peripheral, ordinary vs. killings, and studied their differential impact on the future incidence and seriousness of terrorism.

The general findings of the study can be grouped in three categories: the nature of relationships in the current period, the nature of relationships in the lagged period, and the differential impacts of hardcore vs. peripheral and ordinary arrests vs. killings.

Controlling for other variables, arrests in general, arrests through the usual police procedures (ordinary), and arrests of hardcore terrorists in the current time period are associated with higher expected counts of both the incidence and seriousness of terrorism in the same six-month time period. Defiance theory predicts these effects, based on the

assumption that terrorists fulfill the four necessary conditions likely to create defiance in them instead of deterrence. Peripheral arrests are associated with higher expected counts of incidence of terrorism only. Their null relationship with seriousness of terrorism could be explained by their weaker impact, most probably caused by the strongest coefficient in the study (1.22) of hardcore arrests in case of seriousness. It seems that in the case of arrests of hardcore terrorists, terrorists not only want to increase the incidents but also to increase the casualties per incident. Logically this is understandable because hardcore terrorists “are more important an emblem or identity-markers for the group” (R. Collins, personal communication, March 2, 2010), and any damage to them is likely to be taken more seriously by the terrorist community, hence the strongest reaction. Then why would terrorists like to generate more casualties as compared to increasing the number of incidents? Perhaps, terrorists want to punish the government in a bigger way on the arrest of their hardcore group member and one way to do so is to commit a mass-killing event. Terrorist events of bigger magnitude (mass-killing) are sure to have a bigger impact on the government and the other audiences, as compared to the impact of a target killing of one person.

The lags of arrests and the lags of peripheral arrests exhibit an inverse relationship with the expected count of incidents. This indicates a likely decay in the defiance effect in the lagged six months. Perhaps, it becomes difficult for terrorists to keep the same level of escalation of violence for longer periods because of many reasons. It could be their own internal exhaustion, or the fear of government’s harsher reaction, and may be the realization that the public may become used to the violence, reducing the desired

effects of terrorism. The lagged effects of arrests do not appear in the case of seriousness of terrorism. This discrepancy could be explained by arguing that the coefficients of arrest variables except the hardcore terrorists in case of seriousness are weaker as compared to their counterparts in the models on incidence of terrorism. The possible reason behind this may be the inclusion of more explanatory variables (weapon types, target types) in the seriousness model. The weaker overall coefficients make it hard for them to be discernible.

Some of the predictions of defiance theory about the differential effects are supported. Defiance theory predicts that hardcore arrests will generate more defiance as compared to peripheral arrests. This prediction was confirmed in the seriousness model but not in the incidence model. As I discussed earlier, in the case of hardcore arrests, the terrorists would most probably emphasize on increasing casualties. Therefore, the coefficient for hardcore arrests is the strongest one for casualties, making the difference between hardcore and peripheral discernible. However, in the case of terrorism incidence, though the difference is present, but comparatively smaller to be statistically significant.

There are no comparable research studies on the defiant effect of terrorist arrests on the future incidence or seriousness of terrorism to compare the current study with. However, LaFree, Dugan, and Korte (2009) cite the researchers (Atran, 2003; Crenshaw, 2002; Higson-Smith, 2002) arguing that the extent to which government-based counterterrorist strategies outrage participants or energize a base of potential supporters may increase the likelihood of further terrorist strikes. LaFree, Dugan, and Korte (2009) cite McCauley (2006) pointing out that because of this principle, the responses to

terrorism can be more dangerous than terrorism itself. Brophy-Baermann and Conybeare (1994) conclude that Israeli counterterrorist strategies did significantly reduce future terrorist strikes, but that these strategies were only effective to the extent that they exceeded the level of counterterrorist violence anticipated by terrorist groups. Moreover, the effects were only short term and lasted no more than nine months, as shown in this study too in the form of decreasing defiance. This account shows that findings of the current research study are consistent with the findings of earlier studies conducted not on arrests but on other counterterrorism strategies. And that's what, possibly, imparts to this study an external validity.

In the light of this study, one of the recommendations would be to avoid arresting terrorists as it leads to defiance. However, this recommendation rather seems as simplistic, because an arrest is not only preventive but also the starting point of further criminal justice processes. Terrorists have to be arrested not only to initiate the criminal justice process but also to achieve the deterrence effect which comes after some time. In the light of findings of this study, my recommendation to the practitioners and policy makers would be what Braithwaite has suggested "in the case of counterterrorism policies, it [incapacitation] may mean either arrest or imprisonment of high-profile offenders or targeted assassination" (Braithwaite, 2005: 96). For the immediate defiance reaction, I would argue that either the arrests should be made after making preparations for the counterattack or proper preparation should be made immediately after arrests.

Another policy implication of the current study derived from defiance theory concerns the theory's four necessary conditions. We need to look out for ways to keep

terrorists from fulfilling those conditions, as a preventative measure. We need to break their pride. I fear that humane treatment and fairness in court would add glamour to their situation. Fairness is likely to lead to failure of cases in the court, because terrorists are not bound by any ethics, and they would intimidate the judges and the witnesses. It is unrealistic to believe that the judges and witnesses could be provided with foolproof security. In Pakistan, judges and witnesses have not only been verbally threatened, they have been killed, ultimately leading to weaker prosecutions.

In addition to its theoretical and policy implications, the study has wider importance for the international community, which shares a growing concern over the terrorism situation in Pakistan. They should know that the sectarian terrorism which this study uses as its context is, “the principal source of terrorist activity in Pakistan” (Haqqani, 2006).

I consider it important to recognize the limitations of this study. First, I have conducted this study and interpreted the results in the framework of Sherman’s defiance theory (1993). According to this theory defiance to appear needs to have four necessary conditions. One of the conditions is that the terrorists are poorly bonded to the community. This study possibly lacks direct evidence of the existence of this condition, although circumstantial evidence is presented in the relevant section. This has two implications for the study. The possibility of interpreting the results of the study in terms of other frameworks such as backlash and escalation of violence may not be ruled out. Further, it makes it hard to interpret the relationship between arrests and terrorism incidence and seriousness as causal. Therefore, I have used the words *associated*, *linked*,

connected and correlated while describing the results. However, I have argued that common sense, use of fixed-effects and IV methods, use of time dummies and the explicit use of some controls have enhanced our confidence that the chances of confounding variables are minimized.

Second, the sample is from a specific location (Pakistan) and about a specific type of terrorist. Further study is needed to see if these results can be extrapolated to other locations and terrorist types. Third, the method used is still emerging. Panel data methods are originally designed for data sets where the number of locations (n) is larger than the number of time points (T). The smaller the T , the better it is. The present study features data with the reverse – a larger number of T and a smaller n . Although methods of cross-sectional time series are emerging, they are not very far along in their development. I would recommend cross-checking these findings using data with a large number of locations and few time periods. Fourth, the impact of killings is contrary to our expectations in light of defiance theory, but despite larger coefficients, they are not statistically significant. I presume that sparseness of the variable killing may be responsible for coefficients not showing significance. I recommend using a dataset in which this variable is not sparse and then see whether we get the same results with statistical significance.

In short, the study supports defiance theory to a large extent. As a policy implication, I believe that we have no option but to arrest terrorists. We have to arrest them, but only after doing our own target hardening.

EPILOGUE

Despite such a high number of terrorist incidents in recent years, Pakistan has just 2.9% of the world terrorism (based on the GTD) incidents *vis-à-vis* its population of 2.6% in the world, suggesting terrorism in Pakistan is a problem but not as disturbing as it may seem in isolation. In fact, Pakistan has an image problem²³. Media generally portrays Pakistan as a failed state, marginalized, epicenter of terrorism and an absolutely poor country where systems rarely work. However, there is some evidence to the contrary. Pakistan has achieved some economic and military targets which were impossible without a working system. Pakistan's economic growth rate has been better than the global average during the first 40 years of its establishment. Its GDP growth rate remained 7% during the middle years of the current decade, which is one of the highest in the world. Pakistan has the 27th largest economy in the world, by purchasing power adjusted exchange rates. Pakistan is ranked 46th on the A.T. Kearney/FP Globalization Index, which measures global integration. In 2010, a Pakistani was included in the world list of billionaires for the first time. Pakistan is the 7th atomic power in the world, The Pakistani military is the 7th largest in the world, in terms of the number of active duty personnel. Pakistan has won the Hockey World Cup a record four times (1971, 1978, 1982 and 1994). Pakistan has been the World champion of cricket twice, in 1992 and 2009 (ICC World Twenty). Pakistan won the Squash Championship in the World Open

²³ I googled the phrase “Pakistan’s image” and it gave 40,900 entries, which suggests how much literature is available on the topic.

and in the British Open 30 times. The Pakistani player Jahangir Khan remained unbeaten in 555 consecutive matches. Pakistan can boast of a Nobel Prize in Physics. All of these achievements may be taken as indicative of a social system that is making positive strides.

Pakistan's contributions to the international community are listed as the following. Pakistan is the biggest contributor in terms of providing peacekeepers to the United Nations, with 10,700 personnel deployed in 2009. Pakistan is one of the founders of the Organization of the Islamic Conference, and a member of the Commonwealth of Nations, Next Eleven economies²⁴, and G20 developing nations. Pakistan is also a member of the South Asian Association for Regional Cooperation (SAARC) and the Economic Cooperation Organization (ECO). In the early 1950s, Pakistan was the United States' "most allied ally in Asia" and a member of the Central Treaty Organization (CENTO) and the Southeast Asia Treaty Organization (SEATO), both of them U.S.-led defense pacts. During the Afghan Jihad against the Soviets in the 1980s, Pakistan was a major U.S. ally, and Pakistan's ISI had a leading role in defeating the Soviets. During the Gulf War, Pakistan sent 5,000 troops as part of a U.S.-led coalition. In the wake of the American War on terrorism, Pakistan is classified as major non-NATO ally of the United

²⁴ The Next Eleven (or N-11) are eleven countries identified by Goldman Sachs investment bank as having a high potential of becoming the world's largest economies in the 21st century. Goldman Sachs used macroeconomic stability, political maturity, openness of trade and investment policies, and the quality of education as criteria (Wikipedia).

States. Pakistan's successful operations against the militants in Swat and Waziristan are taken by the world as a big contribution to fight terrorism.

Except for the religious conflict already discussed, the rests of the conflicts are most likely to be resolved without using force. But in the earlier days, these conflicts were used as political tools both by governments and the parties involved, and the international actors exploited them. However, some of the steps which the government of Pakistan has taken to reduce the conflicts are: enforcement of a quota system in services, constitutional amendments (to grant maximum provincial autonomy), local rule in the Northern Areas, adult franchise in the FATA, distribution of the long pending rents to the provinces and the distribution of federal resources on both a population and poverty basis. The present government is ready to introduce a bill in the assembly to change Frontier Crime Regulations, the laws enforced in the FATA.

Here it is appropriate to understand Pakistan's behavior as a country in the international arena. The major determinant factor of Pakistan's behavior is its relationship with India. All other relationships are subservient to this factor. India is almost five times bigger than Pakistan. There have been four wars between these two countries. India encouraged, trained guerillas and eventually intervened militarily to separate East Pakistan. Pakistan's support of the independence movement in the Indian-held Kashmir, Pakistan's support of Taliban in Afghanistan to gain strategic depth, Pakistan's providing bases to the U.S. against the Soviet Union, Pakistan's making of an atomic bomb, Pakistan's joining defense pacts with the U.S. and Pakistan's maintaining a big military are all part of a defense system against a much bigger enemy i.e. India. Even the long

military dictatorships, and curtailing of the provincial autonomies in the name of country's integrity and solidarity could be explained just by this factor. Kashmir is the lynchpin of this entire problem. If the international community becomes interested to solve this problem, many of the issues in the region are likely to be solved.

Despite these problems, Pakistan is doing fairly well. With this problem resolved Pakistan could become one of the top economies in the 21st centuries. It has the 4th largest coal reserves in the world, and the 6th largest available gas reserves in Asia Pacific. There is a strong evidence of large unexploited oil and gas reserves. Pakistan has one of the largest canal irrigation systems in the world. Pakistan's geostrategic position is perhaps its biggest resource. It can provide an economically beneficial land route to China, Afghanistan, India and the Central Asian States.

APPENDICES

APPENDIX 1. Within and Between Variation in Outcome and Predictor Variables

. xtsum incidents casualties arrests hardcore peripheral arrests_usual arrests_killing

Variable	Mean	Std. Dev.	Min	Max	Observations	
incidents	overall	1.3375	2.764276	0	24	N = 320
	between	1.038629	.3	2.875		n = 8
	within	2.587346	-1.5375	22.4625		T = 40
casualties	overall	6.459375	16.86843	0	142	N = 320
	between	4.342562	1.825	13.6		n = 8
	within	16.37044	-7.140625	134.8594		T = 40
arrests	overall	2.771875	4.385194	0	26	N = 320
	between	1.168213	1.2	4.475		n = 8
	within	4.246417	-1.703125	25.34688		T = 40
hardcore	overall	.83125	1.644681	0	12	N = 320
	between	.383992	.275	1.3		n = 8
	within	1.604852	-.46875	11.93125		T = 40
peripheral	overall	1.6375	3.156299	0	21	N = 320
	between	.7555745	.825	2.7		n = 8
	within	3.075895	-1.0625	20.6875		T = 40
arrest-usual	overall	2.46875	4.103553	0	26	N = 320
	between	1.0856	1.1	3.925		n = 8
	within	3.975513	-1.45625	25.34375		T = 40
arrest-killing	overall	.303125	1.096585	0	9	N = 320
	between	.1933896	.05	.575		n = 8
	within	1.081513	-.271875	8.728125		T = 40

APPENDIX 2. Two-Step Estimation of Effects of Arrests on Terrorism Incidence

```
. xi: regress arrests incidents L_arrests localized_conflict i.panel i.hal fyear CID, vce(robust)
i.panel          _lpanel_1-8          (naturally coded; _lpanel_1 omitted)
i.hal fyear      _lhal fyear_60-99    (naturally coded; _lhal fyear_60 omitted)
```

Linear regression

```
Number of obs = 312
F( 48, 263) = 4.97
Prob > F = 0.0000
R-squared = 0.4819
Root MSE = 3.4585
```

arrests	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
incidents						
L1.	.4605068	.1491629	3.09	0.002	.1668013	.7542123
L_arrests	.1174906	.0601999	1.95	0.052	-.0010445	.2360257
localized_t	-2.156052	1.398604	-1.54	0.124	-4.909938	.597834
_lpanel_2	-.2850697	.7405815	-0.38	0.701	-1.743293	1.173154
_lpanel_3	.6406293	.8291021	0.77	0.440	-.9918934	2.273152
_lpanel_4	-.7805877	.7394968	-1.06	0.292	-2.236675	.6755
_lpanel_5	-1.026591	.7258556	-1.41	0.158	-2.455819	.402637
_lpanel_6	.6083878	.982981	0.62	0.537	-1.327126	2.543902
_lpanel_7	-1.195118	.6998439	-1.71	0.089	-2.573128	.1828921
_lpanel_8	-1.487866	.7370479	-2.02	0.045	-2.939132	-.0366005
_lhal fyear-61	.7249531	.798907	0.91	0.365	-.8481147	2.298021
_lhal fyear-62	.2435106	.6707236	0.36	0.717	-1.077161	1.564182
_lhal fyear-63	-.1447466	.809373	-0.18	0.858	-1.738422	1.448929
_lhal fyear-64	(dropped)					
_lhal fyear-65	1.156334	.8804178	1.31	0.190	-.5772303	2.889899
_lhal fyear-66	.9971417	.8166666	1.22	0.223	-.6108953	2.605179
_lhal fyear-67	.0205122	.6843232	0.03	0.976	-1.326937	1.367962
_lhal fyear-68	-.0248068	.7069869	-0.04	0.972	-1.416882	1.367268
_lhal fyear-69	2.302503	1.481066	1.55	0.121	-.613752	5.218758
_lhal fyear-70	.1633965	1.075056	0.15	0.879	-1.953416	2.280209
_lhal fyear-71	-8.809712	2.235115	-3.94	0.000	-13.21071	-4.408714
_lhal fyear-72	-7.881274	2.196669	-3.59	0.000	-12.20657	-3.555977
_lhal fyear-73	-6.603083	2.198342	-3.00	0.003	-10.93167	-2.274493
_lhal fyear-74	-2.71865	2.60705	-1.04	0.298	-7.851996	2.414696
_lhal fyear-75	(dropped)					
_lhal fyear-76	-7.104063	2.677716	-2.65	0.008	-12.37655	-1.831573
_lhal fyear-77	-1.63424	2.840315	-0.58	0.566	-7.226892	3.958412
_lhal fyear-78	-1.803661	3.252427	-0.55	0.580	-8.207771	4.600449
_lhal fyear-79	-3.682701	2.608935	-1.41	0.159	-8.819759	1.454356
_lhal fyear-80	-4.269035	2.777271	-1.54	0.125	-9.73755	1.19948
_lhal fyear-81	-4.396732	2.552837	-1.72	0.086	-9.423331	.6298677
_lhal fyear-82	-4.352673	2.373562	-1.83	0.068	-9.026275	.3209301
_lhal fyear-83	-5.120743	3.174045	-1.61	0.108	-11.37052	1.129032
_lhal fyear-84	-3.861117	2.439123	-1.58	0.115	-8.663812	.9415782
_lhal fyear-85	-1.978607	2.594473	-0.76	0.446	-7.087189	3.129975
_lhal fyear-86	-5.618208	2.455157	-2.29	0.023	-10.45247	-.7839433
_lhal fyear-87	-6.687492	2.303979	-2.90	0.004	-11.22408	-2.1509
_lhal fyear-88	-7.939006	2.219888	-3.58	0.000	-12.31002	-3.567992
_lhal fyear-89	-3.002897	3.265857	-0.92	0.359	-9.43345	3.427656
_lhal fyear-90	-7.383227	2.25232	-3.28	0.001	-11.8181	-2.948353
_lhal fyear-91	-6.635074	2.215421	-2.99	0.003	-10.99729	-2.272855
_lhal fyear-92	-5.789447	2.744925	-2.11	0.036	-11.19427	-.3846217
_lhal fyear-93	-6.402124	2.427815	-2.64	0.009	-11.18255	-1.621695
_lhal fyear-94	-5.761256	2.253112	-2.56	0.011	-10.19769	-1.324822
_lhal fyear-95	-5.027124	2.547357	-1.97	0.049	-10.04293	-.0113156
_lhal fyear-96	-4.365242	2.488741	-1.75	0.081	-9.265635	.5351506
_lhal fyear-97	-7.010923	2.366252	-2.96	0.003	-11.67013	-2.351714
_lhal fyear-98	-4.140127	2.713579	-1.53	0.128	-9.483233	1.202978
_lhal fyear-99	-6.971678	2.403788	-2.90	0.004	-11.7048	-2.238559
CID	8.274344	2.230552	3.71	0.000	3.882331	12.66636
_cons	-.0707967	.8546939	-0.08	0.934	-1.75371	1.612117

. predict lpuhat, residual
(8 missing values generated)

```
. xi: poisson incidents l.incidents arrests l.arrests localized_conflict i.panel i.hal fyear lpuhat, vce(robust)
> nolog
i. panel          _lpanel_1-8      (naturally coded; _lpanel_1 omitted)
i. hal fyear      _lhal fyear_60-99 (naturally coded; _lhal fyear_60 omitted)
note: _lhal fyear_71 dropped because of collinearity
note: _lhal fyear_75 dropped because of collinearity
```

```
Poisson regression              Number of obs =      312
                                Wald chi2(49) =    10929.21
                                Prob > chi2 =      0.0000
                                Pseudo R2 =      0.5448

Log pseudolikelihood = -323.71528
```

incidents	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]
incidents					
L1.	.055199	.034809	1.59	0.113	-.0130255 .1234235
arrests					
_.	.0543724	.0460247	1.18	0.237	-.0358343 .1445792
L1.	-.0489129	.0211584	-2.31	0.021	-.0903826 -.0074431
localized_t	.8773116	.2871784	3.05	0.002	.3144523 1.440171
_lpanel_2	.3554873	.1960115	1.81	0.070	-.0286882 .7396629
_lpanel_3	.3816858	.2501629	1.53	0.127	-.1086245 .871996
_lpanel_4	-.1110851	.2520693	-0.44	0.659	-.6051318 .3829616
_lpanel_5	-.4489567	.2971972	-1.51	0.131	-1.031453 .1335391
_lpanel_6	-.7245708	.2846079	-2.55	0.011	-1.282392 -.1667496
_lpanel_7	-.8437708	.3530678	-2.39	0.017	-1.535771 -.1517706
_lpanel_8	-1.276957	.3672035	-3.48	0.001	-1.996663 -.5572514
_lhal fyea-61	-.3111531	.3945249	-0.79	0.430	-1.084408 .4621015
_lhal fyea-62	.2784494	.4196914	0.66	0.507	-.5441306 1.101029
_lhal fyea-63	.3342507	.3614821	0.92	0.355	-.3742412 1.042743
_lhal fyea-64	-.814894	.4713401	-1.73	0.084	-1.738704 .1089157
_lhal fyea-65	-.5888288	.4004427	-1.47	0.141	-1.373682 .1960245
_lhal fyea-66	-.594475	.4701978	-1.26	0.206	-1.516046 .3270957
_lhal fyea-67	.4759891	.5268418	0.90	0.366	-.5566019 1.50858
_lhal fyea-68	.3009289	.3803758	0.79	0.429	-.4445938 1.046452
_lhal fyea-69	.4886733	.3098076	1.58	0.115	-.1185386 1.095885
_lhal fyea-70	.5009073	.3629808	1.38	0.168	-.2105219 1.212336
_lhal fyea-72	-.0814908	.3386448	-0.24	0.810	-.7452224 .5822407
_lhal fyea-73	.8461286	.389207	2.17	0.030	.0832968 1.60896
_lhal fyea-74	.9627307	.2390363	4.03	0.000	.4942283 1.431233
_lhal fyea-76	.412539	.4387913	0.94	0.347	-.4474762 1.272554
_lhal fyea-77	.3204565	.4948472	0.65	0.517	-.6494261 1.290339
_lhal fyea-78	-.3606415	.3763037	-0.96	0.338	-1.098183 .3769002
_lhal fyea-79	-.4726857	.4867964	-0.97	0.332	-1.426789 .4814178
_lhal fyea-80	-.748885	.3425315	-2.19	0.029	-1.420234 -.0775356
_lhal fyea-81	-.932284	.3966873	-2.35	0.019	-1.709777 -.1547912
_lhal fyea-82	.2872675	.4285255	0.67	0.503	-.5526269 1.127162
_lhal fyea-83	-.3678984	.3479144	-1.06	0.290	-1.049798 .3140014
_lhal fyea-84	-.1218878	.2699743	-0.45	0.652	-.6510276 .4072521
_lhal fyea-85	-1.365715	.8002895	-1.71	0.088	-2.934253 .2028237
_lhal fyea-86	-2.002381	.940452	-2.13	0.033	-3.845633 -.1591287
_lhal fyea-87	-16.31478	.4903313	-33.27	0.000	-17.27581 -15.35375
_lhal fyea-88	-1.380303	1.02941	-1.34	0.180	-3.397908 .6373032
_lhal fyea-89	-1.370415	.4625691	-2.96	0.003	-2.277033 -.4637959
_lhal fyea-90	-1.351537	.6656228	-2.03	0.042	-2.656134 -.0469403
_lhal fyea-91	-1.516453	.7906711	-1.92	0.055	-3.06614 .0332342
_lhal fyea-92	-16.28615	.4990965	-32.63	0.000	-17.26436 -15.30794
_lhal fyea-93	-2.110028	1.073504	-1.97	0.049	-4.214058 -.005998
_lhal fyea-94	-.16.479	.486173	-33.90	0.000	-17.43188 -15.52612
_lhal fyea-95	-16.33656	.4653303	-35.11	0.000	-17.24859 -15.42452
_lhal fyea-96	-2.317358	.8786168	-2.64	0.008	-4.039415 -.5953003
_lhal fyea-97	-16.30798	.496264	-32.86	0.000	-17.28064 -15.33532
_lhal fyea-98	-1.323582	.5242187	-2.52	0.012	-2.351032 -.2961325
_lhal fyea-99	-16.18956	.5020295	-32.25	0.000	-17.17352 -15.2056
lpuhat	.00979	.0525429	0.19	0.852	-.0931921 .1127721
_cons	.2756117	.3822432	0.72	0.471	-.4735712 1.024794

. test lpuhat=0

```
( 1) [incidents]lpuhat = 0
      chi2( 1) =      0.03
      Prob > chi2 =    0.8522
```



```

. xi:poisson casual ties incidents arrests L.arrests EXP Mass localized_conflict i.region i.hal fyear lpuhat2 ,
> vce(robust) irr nolag
i.region _lregion_1-8 (naturally coded; _lregion_1 omitted)
i.hal fyear _lhal fyear_60-99 (naturally coded; _lhal fyear_60 omitted)
note: _lhal fyear_67 dropped because of collinearity

```

```

Poisson regression          Number of obs   =    312
                          Wald chi2(52)        =  33093.82
                          Prob > chi2         =    0.0000
                          Pseudo R2           =    0.7955

Log pseudolikelihood = -705.22344

```

casual ties	IRR	Robust Std. Err.	z	P> z	[95% Conf. Interval]
incidents	1.107872	.0293086	3.87	0.000	1.051892 1.166831
arrests					
---	1.03416	.0677731	0.51	0.608	.9095041 1.175901
L1.	.97279	.0192752	-1.39	0.164	.9357355 1.011312
EXP	1.777306	.2902903	3.52	0.000	1.290429 2.447882
Mass	8.019786	1.365516	12.23	0.000	5.744207 11.19684
localized_t	.8175314	.1930915	-0.85	0.394	.514589 1.298818
_lregion_2	.7493635	.1816631	-1.19	0.234	.4659524 1.205157
_lregion_3	.8696808	.2029566	-0.60	0.550	.5504473 1.374055
_lregion_4	.824337	.2417818	-0.66	0.510	.4639204 1.464759
_lregion_5	.6999174	.1715016	-1.46	0.145	.432988 1.131404
_lregion_6	.7574185	.185366	-1.14	0.256	.4688328 1.22364
_lregion_7	.6780054	.2010174	-1.31	0.190	.3791979 1.212273
_lregion_8	.4030655	.1221956	-3.00	0.003	.2224951 .7301812
_lhal fyear-61	.8825389	.339899	-0.32	0.746	.4148624 1.87743
_lhal fyear-62	1.463996	.8433705	0.66	0.508	.4733525 4.527884
_lhal fyear-63	1.113361	.3346775	0.36	0.721	.6176803 2.006818
_lhal fyear-64	.6685297	.258641	-1.04	0.298	.3131897 1.427033
_lhal fyear-65	.9457075	.4795612	-0.11	0.912	.350041 2.555023
_lhal fyear-66	.811947	.2969516	-0.57	0.569	.3964784 1.662784
_lhal fyear-68	1.039575	.3394267	0.12	0.905	.5481938 1.971413
_lhal fyear-69	1.009005	.2914132	0.03	0.975	.5728698 1.777178
_lhal fyear-70	.7047054	.1869099	-1.32	0.187	.4190273 1.185149
_lhal fyear-71	1.520724	.6798932	0.94	0.348	.6331266 3.652667
_lhal fyear-72	1.149786	.3226372	0.50	0.619	.6633833 1.992827
_lhal fyear-73	1.469914	.4284531	1.32	0.186	.8301988 2.602565
_lhal fyear-74	.4838789	.3079947	-1.14	0.254	.1389751 1.684754
_lhal fyear-75	.5497358	.547434	-0.60	0.548	.0780758 3.870717
_lhal fyear-76	3.262362	1.43292	2.69	0.007	1.379307 7.716199
_lhal fyear-77	1.622421	.9212915	0.85	0.394	.5331 4.937627
_lhal fyear-78	.5662595	.390872	-0.82	0.410	.1463715 2.190658
_lhal fyear-79	1.016914	.5528928	0.03	0.975	.3503393 2.951751
_lhal fyear-80	1.219302	.5372823	0.45	0.653	.5140808 2.891952
_lhal fyear-81	1.257725	.7663663	0.38	0.707	.3810001 4.151893
_lhal fyear-82	2.864833	1.714106	1.76	0.079	.8867537 9.255412
_lhal fyear-83	1.14513	.4521368	0.34	0.731	.528167 2.482781
_lhal fyear-84	1.867155	.706673	1.65	0.099	.8892442 3.920483
_lhal fyear-85	.7382004	.370834	-0.60	0.546	.2757873 1.975942
_lhal fyear-86	.4299516	.2479776	-1.46	0.143	.1388299 1.331546
_lhal fyear-87	3.83e-11	1.80e-11	-50.99	0.000	1.52e-11 9.63e-11
_lhal fyear-88	.2386184	.22808	-1.50	0.134	.0366518 1.553505
_lhal fyear-89	2.544863	1.253297	1.90	0.058	.9693121 6.681365
_lhal fyear-90	.3306456	.2313703	-1.58	0.114	.0838942 1.303148
_lhal fyear-91	1.014794	.4988096	0.03	0.976	.3872398 2.65935
_lhal fyear-92	3.89e-11	1.91e-11	-48.78	0.000	1.49e-11 1.02e-10
_lhal fyear-93	.077895	.0803995	-2.47	0.013	.0103024 .5889508
_lhal fyear-94	3.64e-11	1.75e-11	-50.05	0.000	1.42e-11 9.33e-11
_lhal fyear-95	3.29e-11	1.64e-11	-48.49	0.000	1.24e-11 8.73e-11
_lhal fyear-96	.0715363	.0710619	-2.66	0.008	.0102087 .5012827
_lhal fyear-97	3.77e-11	1.76e-11	-51.48	0.000	1.51e-11 9.41e-11
_lhal fyear-98	2.180037	.8440144	2.01	0.044	1.020742 4.655986
_lhal fyear-99	4.46e-11	2.07e-11	-51.29	0.000	1.80e-11 1.11e-10
lpuhat2	1.006508	.0612386	0.11	0.915	.8933626 1.133983

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