Terrorism and Policy: Introduction

Todd Sandler¹

Abstract

This article sets the stage for the special issue by indicating the current focus in the literature on applying analytical tools to enlighten policy makers in the practice of counterterrorism in the post-9/11 era. In particular, the article briefly indicates the main areas of recent work. The article also introduces some key concepts. Next, the article highlights the methodology and main contributions of each of the seven articles of the special issue. The novelty and policy insights of each article are emphasized.

Keywords

counterterrorism, foreign aid, terrorist organizations, terrorist networks, backlash attacks, harboring terrorists, game theory

The hijackings on September 11, 2001 (henceforth, 9/11); the Madrid commuter train bombings on March 11, 2004; the London transit bombings on July 7, 2005; and many other large-scale spectacular terrorist incidents have made policy makers and the public acutely aware of the threat posed by transnational terrorism. This awareness has resulted in massive expenditures on counterterrorism. For the United States, Treverton et al. (2008) estimate that this outlay was between $119 and $147 billion from 9/11 until the end of 2004. Many additional tens of billions of dollars are spent worldwide on defensive measures to harden targets and secure border entry points. Billions more are spent on intelligence and military operations. During the latter half of 2009, military action included U.S. and British efforts to root out the Taliban and al-Qaida from Afghanistan. Counterterrorism expenditures may assume many forms, including giving foreign aid, gathering intelligence, curbing money laundering, and forging information linkages (e.g., countries’ access to INTERPOL’s Stolen and Lost Travel Document database).

¹University of Texas at Dallas, USA

Corresponding Author:

Todd Sandler, School of Economic, Political & Policy Sciences, University of Texas at Dallas, 800 W. Campbell Road, Richardson, TX 75080 USA; phone: +1-972-883-6725; fax +1-972-883-6486
Email: tsandler@utdallas.edu
Since 9/11, a great deal of attention is being paid by political scientists, economists, and other social scientists to applying theoretical and empirical tools to study terrorism. The resulting studies provide many policy insights. For example, theoretical studies show that there is a proclivity to spend too little on proactive or offensive measures (e.g., destroying terrorist training camps or attacking terrorists’ strongholds) against a common transnational terrorist threat and to spend too much on defensive actions (e.g., hardening targets or augmenting surveillance) against this threat. Under-spending on offense arises as countries free ride on the public good associated with limiting a common risk (Arce and Sandler 2005; Sandler and Siqueira 2006). In contrast, overspending on defensive measures stems from countries’ trying to divert attacks abroad by securing potential targets at home (Bier, Oliveros, and Samuelson 2007; Powell 2007; Sandler and Lapan 1988).

Formal models and empirical methods are applied to a wide range of terrorism-related topics. Some of the more prominent topics include the effectiveness of counterterrorism (Enders and Sandler 1993; Landes 1978), the macroeconomic impact of terrorism (Abadie and Gardeazbal 2003; Blomberg, Hess, and Orphanides 2004; Gaibulloev and Sandler 2008; Keefer and Loayza 2008), the microeconomic consequences of terrorism (Drakos and Kutan 2003; Enders, Sandler, and Parise 1992), the causes of terrorism (Abadie 2006; Benmelech, Berrebi, and Klor 2009; Krueger and Maleckova 2003), and the dynamics of terrorist attacks (Brandt and Sandler 2009; Enders and Sandler 1993). In addition, recent articles present a rational-actor model of suicide terrorism (Azam 2005), an examination of terrorist networks (Enders and Su 2007; Siqueira and Sandler forthcoming), a study of counterterrorism targeted killings (Jacobson and Kaplan 2007), and an investigation of terrorism-induced stock price fluctuations (Chen and Siems 2004). On the theoretical side, game theory is an appropriate tool to capture the strategic interactions between various agent pairings: terrorists and targeted governments, rival terrorist groups and mutually targeted governments, terrorists and the media, terrorists and their supporters, and political and military wings of a terrorist group. Multistage games permit the analysis to include three or more active agents, whose sequence of actions can be essential to the resulting equilibrium. Decision theory may also be applied to ascertain decisions within a terrorist organization. On the empirical side, a large range of diverse methods are applicable, including time-series analysis, panel estimation, state-space modeling, cross-sectional estimation, discrete-choice models, time-to-failure models, and spatial econometrics.

The hallmark of post-9/11 articles on terrorism is to enlighten policy makers during a time when fear of the potential destructiveness of future terrorist attacks looms large in the mind of the public. Recessionary concerns and deficit spending underscore the importance of allocating counterterrorism resources efficiently and frugally. The primary purpose of this special issue is to investigate unexplored aspects of terrorism with advanced analytical methods with the intent of drawing a host of policy recommendations. These novel issues involve changes in terrorist targeting over time, the use of foreign aid in fighting terrorism, the influences on the structure of terrorist organizations, the costs of harboring terrorists, and the role of backlash in fostering
large-scale terrorist attacks. A mix of theoretical and empirical articles is included, authored by many active contributors to the study of terrorism.

**Preliminaries**

Terrorism is the premeditated use or threat to use violence by individuals or subnational groups to obtain a political or social objective through the intimidation of a large audience beyond that of the immediate victims. Terrorist violence may assume myriad forms, for example, kidnappings, skyjackings, assassinations, threats, bombings, armed attacks, or suicide missions. Terrorists intend to apply sufficient pressure through their attacks that the government views the costs of conceding to the terrorists’ demands as less than the costs of enduring further attacks. The presence of a political or social objective is essential for the definition, that is, the threat of violence to extort money with no political agenda is a criminal act, not terrorism. The large audience is also an important ingredient in the definition, since terrorists hope that this audience—typically, the public at large—will lobby the government to concede. After the Madrid commuter train bombings, the newly elected government viewed its victory as a mandate to pull Spanish troops out of Iraq, as demanded by the terrorists. Hezbollah’s suicide attacks against Israeli targets during 1983 to 1985 resulted in Israeli citizens pressuring their government to withdraw troops from Lebanon.

Another essential distinction is between domestic and transnational terrorism. Domestic terrorism is homegrown and has consequences for just the host country: its institutions, citizens, property, and policies. For a domestic incident, the three main participants—the perpetrators, the victims, and the audience—are all from the venue country where the attack takes place. Many of the Palestinian attacks in Israeli and/or on occupied soil are classified as domestic terrorist attacks. Most of the Tamil Tiger attacks in Sri Lanka were domestic events unless foreigners become victims. Many left-wing groups in Europe (e.g., Italian Red Brigades and Red Army Faction) engaged in domestic events when targeting judges and officials. These same groups also launched transnational terrorist attacks in the 1970s and 1980s when targeting foreign institutions or U.S. military personnel. In addressing domestic terrorism, a country can be self-reliant if it possesses sufficient resources. Because attacks primarily involve the home country, it cannot rely on the counterterrorism actions of others, who have no interest in weakening the terrorists. Countries have the proper incentive to choose the proper mix of defensive and proactive countermeasures against domestic terrorists, since the benefits from such actions stay within the country (Arce and Sandler 2005). Failure to resort to proactive measures means that the terrorist threat remains unabated, necessitating a continual stream of defensive spending. In the 1980s, European countries eliminated Direct Action in France, the Red Brigades in Italy, and the Combatant Communist Cells in Belgium.

Terrorism assumes a transnational form when an incident in one country involves perpetrators, victims, institutions, governments, or citizens of at least one other country. If an incident originates in one country but terminates in another country, then it is
a transnational terrorist event, as is the case of a hijacking of a plane in Greece that is made to fly to Algeria. An attack against a multilateral organization—for example, the United Nations or the World Bank—is a transnational incident owing to its multicontry impact. In general, any terrorist attack that impacts two or more countries is a transnational terrorist event. The kidnapping of foreign aid workers in Iraq in recent years, with a demand that such workers leave the country, is a transnational incident. The four hijackings on 9/11 were transnational terrorist attacks with victims from numerous countries, foreign perpetrators, and global ramifications. As indicated earlier, counterterrorism against transnational terrorism results in both negative externalities (e.g., defensive measures diverting attacks abroad) and positive externalities (e.g., proactive efforts making all at-risk countries safer). These externalities complicate counterterrorism efforts because nations’ independent actions will not properly account for the resulting interdependencies.

In this special issue, Brandt and Sandler; Azam and Thelen; and Blomberg, Engel, and Sawyer are about transnational terrorism. The Benmelech, Berrebi, and Klor article concerns domestic terrorism. The remaining three articles by Enders and Jindapon, Feinstein and Kaplan, and Arce and Sandler are general theoretical treatments, applicable to either form of terrorism.

**Special Issue Articles**

Brandt and Sandler display the downside of homeland security and self-protective measures, that is, the gradual shift of attacks over time to the most vulnerable and hardest-to-protect target group, that of private parties. At the outset of the modern era of transnational terrorism in 1968, government officials and the military were targets of choice. As governments decreased the vulnerability of these two target groups, terrorists responded and shifted their attacks to business targets. When businesses hardened their venues and protected their employees, terrorists took increased aim at private parties. In the late 1980s, cumulative transnational terrorist attacks against private parties surpassed those of businesses; in the late 1990s, cumulative transnational terrorist attacks against private parties surpassed those of officials. These shifts in targeting are traced to four drivers: an application of technology to counterterrorism (e.g., the installation of metal detectors in airports), the changing orientation of the terrorists, the rise and fall of state-sponsored terrorism, and the end of the cold war. It is important to note that targeting changepoints depended on more than the emerging dominance of the fundamentalist terrorists. Changes in defensive barriers and state sponsorship also played a role. This insight is not in the literature. The current targeting regime, which started in the early 1990s, is likely to stay, since the fundamentalist terrorists remain dominant and state sponsorship continues to be limited. Unlike substitutions among attack modes, this article finds that regime change for target substitutions occurs infrequently, thereby indicating that forecasting models have a longer validity span when investigating terrorist targeting.
The authors apply a Bayesian Poisson changepoint regression model to identify changes in terrorist target choice over time. Dynamics are also related to two sets of covariates that concern the outcome of the attacks (i.e., successfully completed, aborted, or stopped by authorities) and the nature of the victim (i.e., people or property). As transnational terrorist attacks fell in numbers after the cold war, terrorists responded with more attacks on people, which circumvented ever-increasing security around property. Brandt and Sandler’s analysis can inform homeland security that resources need to better protect private parties when away from secure locations. This article serves as a wake-up call that effective policies can have unintended consequences. Terrorists have been led by defensive measures to attack the most costly and hardest target to protect. This study can educate policy makers on anticipating future targeting shifts. Moreover, the results indicate that greater effort is needed in proactive measures to root out the terrorists, because defensive measures for private parties are so expensive.

In the second article, Azam and Thelen present a novel investigation of foreign aid as a counterterrorism tool. This article is both theoretical and empirically significant extends earlier work by Azam and Delacroix (2006) and Azam and Thelen (2008) by adding a military intervention option and accounting for endogeneity in the estimations. The article offers a three-player game, where a foreign power allocates its aid among recipient countries that contain a terrorist risk to the foreign power. The donor country must choose between foreign aid and military intervention for each of its recipient states. Military intervention consists of actions to eliminate the terrorists, their assets (e.g., training camps), and their supporters (e.g., the Taliban in Afghanistan). In the game, the three players are the foreign-aid-giving power, the terrorist group, and the recipient governments. The foreign power offers aid to local governments, in part, to support their efforts to weaken indigenous terrorists who attack foreign interests. This clever model accounts for aid funds used by recipient governments to improve their human capital, which alleviates terrorist attacks. In the ensuing analysis, the subgame perfect equilibrium follows from theoretically derived supply-and-demand relationships for terrorist attacks. Changes in policy-choice variables—military interventions, aid, investment in human capital, and so on—determine the comparative-statics results.

The authors then use two alternative terrorism event databases to test some of the reduced-form model’s predictions, while accounting for endogeneity concerns. To investigate the consequences of military interventions, the authors examine U.S. overseas military interventions. A negative binomial specification is used to estimate the supply of terrorist attacks. The findings show that aid per capita and secondary education enrollment ameliorates terrorist attacks. Military interventions increase terrorism when they occur in oil-exporting terrorist countries; otherwise, such interventions mitigate terrorism. The authors emphasize the counterterrorism potential of foreign aid, especially when directed to supporting secondary education. However, military interventions must be used with caution, since they can lead to backlash attacks.

The next three articles all address aspects of the organizational structures of terrorist groups, a little explored topic. Enders and Jindapon construct a two-stage game to
investigate contrasts between hierarchical (centralized) and loosely tied flat (decentralized) network structures. These decentralized networks are more descriptive of modern-day terrorist groups in the post-9/11 era that face infiltration concerns as the authorities attempt to eliminate them. There is an essential trade-off between hierarchical and flat terrorist networks. That is, hierarchical structures are more capable of coordinating members’ activities and taking advantage of network externalities (i.e., interlinkage gains or benefits), while decentralized structures are less capable of coordinating members’ activities and cashing in on network externalities. As a consequence, decentralized structures are hindered from engaging in complicated spectacular events that may include coordinated simultaneous attacks. Moreover, such structures are less equipped to develop attacks using weapons of mass destruction. This innovative article investigates the trade-off between connectivity and vulnerability by appending graph theory insights to a game representation.

Furthermore, Enders and Jindapon contrast the optimization problem of the centralized network planner, who simultaneously chooses connectivity and the operatives’ effort, with that of the decentralized network planner, who only chooses connectivity. In the latter case, a two-stage procedure is involved: the planner sets connectivity in stage 1, while the operatives choose effort in stage 2. Not surprising, the independent choices of the decentralized structures do not internalize network externalities, thereby displaying suboptimal results when compared with the centralized network. Comparative statics involve changes in costs, vulnerability, and network externalities. Rich results follow—for example, greater vulnerability leads to more inefficient decentralized terrorist networks. Throughout the analysis, the government is a third passive agent. Extensions can further integrate graph theory to allow for second-order linkages and vulnerabilities.

The influence of changes in counterterrorism is illustrated through a series of simulations. In contrast to centralized structures, decentralized terrorist networks are less responsive to standard counterterrorism policies. This suggests that such policies are less effective against today’s loosely tied terrorist networks. In many ways, the “war on terror” has caused the terrorists to adopt an organizational form more resilient to conventional counterterrorism tools. This calls for rethinking policy. On the bright side, these decentralized networks are generally less capable of mounting spectacular attacks, which is an important policy insight.

Feinstein and Kaplan also present a theoretical model on terrorist organizations, but unlike the previous article, these authors apply decision-theoretic tools to model efforts by a terrorist organization to maximize its growth. The organization’s growth is primarily influenced by the size and success of past attacks. Large-scale successful attacks are particularly productive of new recruits. The authors devise a two-period model in which the terrorist group can either engage in modest attacks that are planned or executed in a single period or more ambitious (spectacular) attacks that are planned and executed over two periods. Modest attacks are associated with small fixed costs and large marginal costs; ambitious attacks are associated with large fixed costs and small marginal costs. The terrorist group can also mix attacks: one or more small attacks in the first period, followed by a large attack in the second period. Thus, the terrorist organization plans over a two-period horizon.
The government represents a passive agent that can thwart attacks and influence the group’s perceived parameters. The authors demonstrate that a terrorist group must attain a certain resource threshold before engaging in spectacular or ambitious attacks. Throughout the analysis, the authors model the terrorist group’s value function as convex, thus increasing at an increasing rate. This value function is dependent on the government’s counterterrorism actions. Early governmental action can greatly control the growth of the terrorist organization owing to convexity considerations. Moreover, early action can inhibit the group from amassing a resource base sufficient to support large-scale spectacular attacks. Another important factor behind the growth in the organization is the natural growth rate of the group, which may be curtailed with policy. As in Enders and Jindapon, Feinstein and Kaplan offer simulations, based on sensible values of the parameters, to illustrate the two-period dynamics. Logical extensions include a multiperiod setting and the inclusion of game-theoretic considerations.

In the third article about terrorist organizations, Blomberg, Engel, and Sawyer apply an empirical model to investigate how transnational terrorist groups survive and may eventually die out. Most transnational terrorist organizations are very ephemeral, while a few (e.g., Fatah, Popular Front for the Liberation of Palestine [PELP], and Euskadi ta Askatasuna [ETA]) last for decades. To investigate the determinants of the longevity of a terrorist group, the authors apply a time-to-failure or hazard model that permits a memory. The longevity of these organizations is inferred from ITERATE data for 1968 to 2007. Blomberg, Engel, and Sawyer distinguish two types of terrorist groups: recidivists and “one-hit wonders.” The survival of recidivist groups is strongly influenced by political (e.g., democracy) and socioeconomic factors (e.g., population and income per capita), while the survival of one-hit wonders and ephemeral groups are less vulnerable to such considerations. These empirical observations may be engineered someday into an informed counterterrorism policy that promotes political and socioeconomic environments that shorten long-lived terrorist groups’ survival. The authors also note that terrorism is increasingly monopolized over time by a small set of formidable organizations. This, in turn, suggests the importance of coordinated transnational actions to take on these long-lived groups that pose global concerns. The authors note, in concordance with Feinstein and Kaplan, that successful attacks foster the group’s survival. Given this observation, governments must crack down quickly on emergent groups. Counterterrorism policies must be tailored for short- and long-lived terrorist organizations. Future analysis should try to include counterterrorism policy instruments as independent variables.

Benmelech, Berrebi, and Klor break with tradition and investigate the economic costs to locations that harbor suicide terrorists. In the past, studies focused on the economic costs to the victimized country rather than those to the perpetrator’s district or country. The exceptions to this general rule were studies that investigated the losses in tourism or foreign direct investment in perpetrators’ countries (e.g., Enders, Sandler, and Parise 1992; Enders and Sandler 1996). Benmelech, Berrebi, and Klor rely on a unique data set of Palestinian suicide attacks during the Second Intifada, where Israeli interests were targeted in Israel, on the West Bank, and in the Gaza Strip. This data set
records the perpetrators’ residential district, the outcome of the bombing, casualties per attack, attack location, and other information.

These authors demonstrate that successful suicide attacks resulted in a 5.3 percent increase in unemployment and a 20 percent reduction in wages in the home district of the suicide terrorist during the quarter following the attack. In addition, Palestinian employment in Israel dropped by 6.7 percent from its mean following successful suicide missions. These adverse consequences persisted for at least six months after the incident, leading to cumulative employment and earnings losses. Thus, there is a real cost to the Palestinians from allowing suicide bombers to operate from their districts. Recognition of these consequences may induce the Palestinian authorities to curb suicide missions originating from their jurisdictions. This study controls for a host of other factors, such as the district’s demographics and Israeli security measures. It is in Israel’s interest to publicize the results of this study in an effort to curb Palestinian terrorism in Israel. The Israeli authorities must work with their Palestinian counterparts to limit these terrorist havens. Cooperating Palestinian districts should be rewarded with greater employment opportunities in Israel. Future research should also examine whether these economic consequences may induce additional terrorist attacks as a backlash of Israeli-imposed economic hardships.

In the final article, Arce and Sandler formulate a two-period signaling game model of terrorist attacks, where the targeted government does not know the terrorist group’s orientation. Militant or $M$-type terrorists expend resources on attacks if their demands are not fully met; politically motivated or $P$-type terrorists cease attacks if their demands are partly met. $P$-type terrorists allocate unspent resources on achieving political goals so that attacks pose a real opportunity costs. In contrast, $M$-type terrorists are vengeful and try to create a backlash against the government by goading it to overreact to heinous attacks. The main purpose of this article is to characterize how targeted governments should tailor their counterterrorism response when the true orientation of the terrorists is unknown to the government.

An inappropriate governmental response may result in two types of regret: $P$-regret when concessions are made to a terrorist group that would not have attack further and $M$-regret when holding firm results in far more costly subsequent attack. The continuous concession choice gives rise to an endogenous characterization of terrorist spectaculars, dependent on the government’s counterterrorism response and the induced backlash attacks. Spectacular terrorist incidents stem from a pooling equilibrium, whereby the government cannot discern the terrorists’ true orientation. Unlike earlier studies (e.g., Arce and Sandler 2007; Lapan and Sandler 1993), a pooling equilibrium may follow from partial concessions. Such concessions may be warranted even for $M$-types to reduce backlash that can result in recruitment and subsequent spectacular incidents. Based on regret considerations, Arce and Sandler calculate a value of intelligence in the presence of backlash attacks when the government correctly learns the group’s type. This value hinges entirely on the avoidance of $M$-regret. The article’s key policy insight is that intelligence must be focused on the likelihood
of a backlash attack. In its evaluation of intelligence, the article specifies how intelligence can curb this likelihood.

**Concluding Remarks**

Articles in this issue display a rich mix of theoretical and empirical tools on diverse topics, thereby illustrating how advanced methods can be fruitfully applied to the study of terrorism policy making. Despite their diversity, the articles possess coherence and common themes. All articles concern improving counterterrorism policies. In so doing, each article offers many policy recommendations for targeted and safe-haven countries. Common themes that characterize two or more articles include backlash attacks, terrorist recruitment, terrorist organizational structure, spectacular terrorist incidents, and terrorist targeting decision. Each article can be extended in many directions, thereby allowing for a rich agenda for future research.

Before concluding, I should mention how this special issue materialized. On May 20 to 22, 2009, the Center for Global Collective Action at the University of Texas at Dallas hosted the second workshop on “Terrorism and Policy.” The call for papers resulted in twenty-five submissions, of which eighteen papers were chosen. These eighteen papers were later culled to nine potential papers for the special issue. Initial refereeing and conference participants’ feedback resulted in seven papers being put forward for the proposed special issue. Two anonymous referees then read and passed judgment on the seven papers. Authors revised their papers in light of these two referees’ comments; each paper was revised no less than three times in response to four referees—two referees before being selected to be submitted to the *Journal of Conflict Resolution* and two after submission. Additional comments came from me and Paul Huth.

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