

Making the Wrong Connection: The Determinants of Terrorist Targeting of Airplanes and Airports

Victor Asal
Associate Professor
Department of Political Science, University at Albany
E-mail: vasal@email.albany.edu
Co-Correspondent author

R. Karl Rethemeyer
Associate Professor
Department of Public Administration & Policy, University at Albany
E-mail: kretheme@albany.edu
Co-Correspondent author

Rose Bellandi
Department of Criminal Justice, University at Albany
E-mail: rbellandi@gmail.com

Richard Legault
University at Maryland
rlegault@start.umd.edu

Robert Tynes
Department of Political Science, University at Albany
E-mail: rt873361@albany.edu

Abstract

Why do terrorist organizations target aviation targets? While there has been very good research done on state level factors relating to counter terrorist efforts and terrorist hijacking, there has been very little research focusing on why terrorist organizations decide to target aviation in the first place. In this paper we use the Big Allied and Dangerous data set to explore this question. We focus on ideology, experience, knowledge and environmental factors that might make an organization more or less likely to target aviation targets. Our hypotheses are partially supported

and our analysis raises further questions about why some organizations are more prone to attack airplanes and airports than others.

Introduction

For most Americans and many people the world over, terrorism is indelibly linked to the image of jets hurtling toward the symbols of American economic and military might in New York and Washington. However, of the 395 terrorist organizations that were active between 1998 and 2005 and for which we have complete data, only 18 (4.56%) have attacked an airliner or airport. Nevertheless, attacks on air transportation have proven to be one of the most deadly and spectacular tactics employed by terrorists. Why do some organizations choose to attack air transportation targets when the vast majority does not?

The importance of trying to answer this question – even if the answer is bounded by the limitations of the data and a probabilistic analysis is underlined by the following statement made a year before the attack on September 11th, by Gerald L. Dillingham, “United States General Accounting Office, in testimony before the Subcommittee on Aviation, Committee on Commerce, Science, and Transportation, U.S. Senate, April 6, 2000(Coughlin et al. 2002):”

“Protecting this system demands a high level of vigilance because a single lapse in aviation security can result in hundreds of deaths, destroy equipment worth hundreds of millions of dollars, and have immeasurable negative impacts on the economy and the public’s confidence in air travel(Coughlin et al. 2002).”

Research into attacks on airplanes and airports has largely focused on the effectiveness of

counterterrorism measures or trends in attacks against air transport targets (Dugan et al. 2005; Enders and Sandler 2000, 2002; Sandler and Enders 2004; Enders and Sandler 2004; Enders and Sandler 2006)

. We suggest a different analytic lens – though complementary – direction: toward organizational and contextual factors make it more likely that a particular terrorist organization will target airplanes or airports. To pursue this line of analysis we use data from the Big Allied and Dangerous I Dataset which starts with data from the National Memorial Institute for the Prevention of Terrorism’s (MIPT) Terrorism Knowledge Base (TKB) fills in missing data, corrects errors and adds more variables and more groups <http://www.albany.edu/pvc/data.shtml>

.¹ Currently the BAAD is the only publicly available numerical source for organizational characteristics and relations of domestic and international terrorism (for the years 1998-2005) that is comprehensive and global in scope. While much terrorism is unclaimed we focus on the 395 organizations active between the years 1998 and 2005 where sufficient information was available to code an array of organizational characteristics.

The first section of this paper reviews the extant literature on airplane and airport attacks. The second proposes a series of hypotheses that grow out of our review of the literature and the literature on terrorist organizational paper. The third section outlines the data we will use to

¹ Until March 30, 2008, MIPT’s Terrorism Knowledge Base was available online. Subsequently, MIPT closed the site and transferred the data to the University of Maryland’s National Consortium for the Study of Terrorism and Responses to Terrorism (START) – see www.start.umd.edu. START intends to integrate the MIPT data with its Global Terrorism Database (GTD), but as of this writing (April 2008) does not have a definitive timeline for completion of this integration.

analyze this question. Section four presents our findings and the final section suggests some implication of our work.

As is true of much quantitative research on terrorism, there are important temporal and data constraints with this study, especially given the eight year span and number of unclaimed attacks. However, we believe that this is the best data available and is worthy of investigation. Due to these constraints, we have narrowed the scope of our analysis. We are not arguing that the factors we identify are invariant over all time. Instead, we are attempting to identify those factors that make it more or less likely that a terrorist organization chose to attack air transportation targets during the period 1998 to 2005.

Why attack airplanes and airports?

Most of the literature on air transportation attacks have used rational choice theories to analyze the efficacy of counter-terrorism efforts, such as the deployment of metal detectors and increased security presence. The literature has generated several important insights, including Enders and Sandler's work that demonstrates the efficacy of detection and punishment as deterrence strategies (Dugan et al. 2005; Enders and Sandler 2000, 2002; Sandler and Enders 2004; Enders and Sandler 2004; Enders and Sandler 2006; Lapan and Sandler 1988; Lia and Skjolberg 2004), while also demonstrating a potential downside from terrorist substitution of other forms of attack for "high-cost" attacks on airliners; the potential for contagion among groups that perpetrate attacks; the economic rationales for cycles of high or low incidence of hijacking; and the potential importance of networks as transmission mechanism for skills needed to perpetrate a hijacking – a perspective we will pursue here as well. However, none of these

approaches theorize or test why a particular terrorist organization may attack an air transportation target. Moreover, the empirical studies referenced here all tend to rely on incident data rather than information on the attributes of the terrorist organizations and their operational environment. We believe organizational studies can provide a complementary perspective – one which allows us to fill a gap in the existing literature on air transport-related terrorism.

Ideology

Much has been written of ideology's role in motivating organizational use of violence. Ideology "...sets out the moral framework within which [organizations] operate (Drake 1998)." Organizations operate with certain frames that help them interpret the world and decide what course of action is appropriate (Goffman 1974) and try to manipulate the frames of others to their advantage (Tarrow 1993). We argue that in the same way that ideological frames can goad an organization to use lethal violence it can, depending on the frame, encourage organizations to attack airports and airplanes.

Much of the recent literature has focused on how religion can legitimate violent behavior by persons and organizations {Laqueur, 1999 #2;Laqueur, 2004 #3;Laqueur, 1999 #2;Hoffman, 1998 #4;Lesser, 1999 #5;Simon, 2002 #6;Simon, 2000 #7;Simon, 2001 #8;Gressang IV, 2001 #9}. In the spectrum of ideologies, religion is particularly potent because its adherents are attempting to address a divine audience (Gressang IV. 2001; Tilly 2003) rather than a terrestrial audience of potential converts. Violence can often act to discourage participation by potential members through its ability to induce shock and abhorrence. "On the other hand, organizations which have no desire for an earthly constituency and possess the necessary resources are unlikely to practice moderation (Crenshaw 1988, 15-16)" in their use of violence.

Attacks on airliners are particularly feared because the victims have literally no control over the jets in which they are ensconced. Studies on the nature of fear and risk avoidance have repeatedly found that the presence or absence of control helps to explain irrationally high or low estimates of risk (Douglas and Wildavsky 1983; Lash 2000). We argue that the logic can be extended: groups that attack civilians when they are utterly helpless are considered to be particularly heinous and likely to incite revulsion and disapproval. Yet for religiously inspired organizations, this may not be an impediment to targeting aircraft, so long as the plane is not filled with co-religionists. The goal is not to inspire other mortals to join. Instead, it is to meet a divine imperative, which provides the moral and ethical authority needed to authorize an attack on helpless civilians.

There are, of course, examples of religions that seek to moderate the use of violence, especially against civilians. Using the case study method Karagiannis and Mccauley argue that the Islamic radical party Hizb ut-Tahrir has the resources and the opportunity to use violence but is constrained by its ideology (Karagiannis and McCauley 2006, 324). Hizb-ut-Tahrir in fact states that it opposes hijacking:

The rules of this Message forbid any aggression against civilian non-combatants. They forbid killing of children, the elderly and non-combatant women even in the battlefield. They forbid the hijacking of civilian airplanes carrying innocent civilians and forbid the destruction of homes and offices which contain innocent civilians. All of these actions are types of aggression which Islam forbids and Muslims should not undertake such actions.

<http://www.hizb.org.uk/hizb/press-centre/press-release/letter-re-young-muslims-and-extremism.html>

Following this view of what is appropriate, Hizb ut-Tahrir's leaders have repeatedly condemned terrorism as "... not condoned by the *shariah* (Karagiannis and McCauley 2006, 325)."

While Karagiannis and McCauley make a convincing argument that in the case of Hizb ut-Tahrir their religious ideology is acting as a constraint on the use of violence of any sort – let alone attacks on airplanes and airports, this is generally not true of Islamic organizations in particular or religiously-inspired organizations generally. While 64% of the organizations in our data set of terrorist organizations killed no one between 1998 -2005, over 65% of those that have some religious component to their ideology have used lethal force. Similarly, 65% of Islamic organizations have killed between 1998 and 2005. Nearly 70% of organizations that mix religion and ethnonationalism have killed over the same period. These figures suggest that, on balance (and holding all else constant), religion tends to increase the propensity to choose violence, including attacks on airplanes and airports.

However, there are several other ideologies that may militate against killing and thus against attacks on airline transport. Radical environmentalism is one such ideology. Taylor argues that most forms of radical environmentalism act to restrain the use of killing to achieve a "green" agenda. The record to date seems to support this argument (Taylor 2003; Taylor 1998). Taylor argues that while the radical environmental movement is diverse it is united by "... a 'deep ecological' moral perception of the kinship and sacred value of all life that is tethered to an apocalyptic vision of the impending collapse of these sacred ecosystems (Taylor 1998, 2)." Despite the regular use of violent language, Taylor argues that one key aspect to this reticence to kill is the belief that all life – including human life – is sacred (Taylor 1998, 14-16). As Ackerman points out:

Deep Ecology, an ideology to which many radical environmentalists subscribe, teaches that all life (including that belonging to human beings) is sacred and cannot be harmed. The ELF's guidelines explicitly state that members must take 'all necessary precautions against harming life.' The ELF has long held that it is not a violent organization, a belief that is probably still regarded as central by many of its members (Ackerman 2003, 145).

Taylor argues that this ideology combined with other factors is likely to keep radical environmental organizations from directly targeting institutions or entities that may result in the killing of anyone (Taylor 1998). Others are not so sanguine (Lee 1995; Ackerman 2003). Ackerman has identified a series of factors from ideological shifts to the demonstration effect of Ted Kaczynski that are likely to move environmental radicals towards lethal violence (Ackerman 2003, 145-148). For our purposes, though, it is important to note that Ackerman agrees with Taylor on the constraining impact of the Deep Ecology ideology (Ackerman 2003, 145).

Despite their history, anarchist terrorist organizations in recent times are probably also less likely to attack airplanes and airports. Historically, anarchist ideology was one of the premier motivators of lethal terrorism in the 19th century (Jensen 2001). However, we believe that frames change. Just as religious terrorism has become particularly lethal at the turn of the 21st century after years of dormancy during the Cold War (Hoffman 1995; Enders and Sandler 2000), anarchist ideologies appear to now constrain the resort to attacks on civilians and places and things on which civilians are usually found.

One reason for this change of frame is the "cross-pollination" of anarchism with environmentalism. Cross-pollination may have a "leveling" effect regarding the resort to lethal violence. Organizations inspired by environmental ideologies may become more likely to use

lethal methods when they “mix in” anarchist elements in their ideological construct, while organizations originally animated by leftism and anarchism may become less lethal as they become fused with the restraining influence of environmentalism and deep ecology (Ackerman 2003, 147). Any organization that holds all life as sacred is going to be constrained in taking such life. If true, such organizations would therefore be less likely to attack airplanes and airports.

Another factor shared by radical environmental, anarchist organizations is that there is no clear definition of an “other” not worthy of proselytization. While religious and ethnic ideologies can facilitate the “othering” of the enemy (Juergensmeyer 2003), anarchism, leftism, and environmentalism, in theory – if not in practice – lack an indelible boundary between “us and them” (Tilly 2003, 21). Any one of the current “them” could become one of “us” should they join the cause. In fact, all three of these ideologies proselytize among the “them,” which should act as a deterrent to the indiscriminate targeting of air transport.

Given the changes in society over the last century, leftist ideologies are not as antithetical to mainstream society in many parts of the world as they had been in the past. This is important because “the more distant a particular group tends to be from the values and beliefs of the mainstream society, the more difficult it becomes for an adherent to moderate or give up the belief system altogether (Kaplan 1995, 46).” In the same way that Taylor argues that lack of distance acts as a constraint on radical environmental organizations (Taylor 1998, 12) we believe it has a suppressing effect on radical leftist organizations, albeit a weaker one.

The preceding discussion suggests two other possibilities. If members of the general population are viewed as potential converts to the cause – as is true in many leftist, anarchist, and environmental ideologies – then the organization will have an incentive to be discriminate in its

killing and thus avoid air transport targets. As noted before, the helplessness of airline passengers makes their killing particularly unpalatable among those who might be converted to the “cause.” If, however, there is a clear dividing line between members and “others” – as there is in ethnic and some religious conflicts – then ideologically there is no reason to avoid airplanes and airports. Since ethnonationalist organizations can clearly define who the “other” is, they are more likely to select air transport targets, so long as they can avoid killing members of their own group.

Finally, for those organizations that compound ethnonationalism with religion – which we will style as “ethno-religious” organizations – the clear definition of other is paired, at least in the case of some religions, with a permissive moral structure: God may authorize killing helpless civilians on a jet. On the other hand, pairing religion and ethnonationalism may undermine the powerful authorizing structure of religion by placing some members of an ethnic group who adhere to a different religion in a protected class. For instance, Islamist Palestinians may be somewhat less likely to kill Christian Palestinians taking an El Al flight due to the common ethnic identity. This is another example of the “cross-pollination” effect outlined before. On balance, we suspect that ethnonationalism “muddies” the authorizing structure of religion and tends to reduce somewhat the tendency of such organizations to choose air transport targets, though ethno-religiously inspired organizations are more likely to hijack and bomb airports than groups inspired solely by ethnonationalism.

The preceding discussion suggests the following hypotheses:

Hypothesis 1: Among terrorist organizations the least likely to attack air transport targets (holding all else constant) are those adhering to anarchist, or environmental

ideologies.

Hypotheses 2: Religious Organizations are most likely to attack air transport targets.

Experience and Knowledge

Although they are a challenging target to protect and even though they are a very attractive target, Airplanes and airports are comparatively well protected target (Frederickson and LaPorte 2002). Despite all of the faults found with the protection of air travel, the airports and airplanes have had an enormous amount of money invested in their protection in comparison with other civilian targets (Arciszewska et al. ; Coughlin et al. 2002; Archick et al. 2007; Loukaitou-Sideris et al. 2006; Howitt and Makler 2005).

This level of protection we believe should give an advantage to experience and equally a disadvantage to those organizations that lack such experience. Older and/or more experienced organizations are at an advantage over newer terrorist organizations because they have acquired knowledge and experience over time. Experience in planning, execution, techniques and tactics are more likely to have been acquired by older organizations (Hannan, 1989). This increase in abilities and the chance to innovate (see (2001: 185), McCormick (2003: 480), and Hoffman (1997: 4)) should lead them to target the hard target of aviation.

Knowledge though is not just a product of age and experience. It can also be tied to who you know. The literature on social movements and a growing literature in terrorist studies suggest that connections spread knowledge and capability. Connections can mean access to money and expertise that would not be available otherwise (Diani and McAdam 2003; Khagram

et al. 2002; Arquilla and Ronfeldt 2001; Sageman 2004). If networks provide knowledge and resources they should, like age and experience, enable organizations to be more capable of targeting aviation. These arguments lead to the following hypotheses:

Hypotheses 3: Older organizations are most likely to attack air transport targets.

Hypotheses 4: More Active organizations are most likely to attack air transport targets.

Hypotheses 5: More connected organizations are most likely to attack air transport targets.

State Sponsorship – Sometimes Allies Can Constrain You

There is a great deal of literature that suggests that state sponsorship enables terrorist organizations (Byman 2001; Byman 2005a, 2005b; Quillen 2002). Hoffman suggests that state sponsorship acts as a “force multiplying effect (Hoffman 1999)” and Wilkinson argues that “...states can provide levels of firepower, funding, training and intelligence far beyond the scope of substate groups [as well as] safe havens and bases ... (Wilkinson 2000, 64).” We think though that state sponsorship comes with very important strings attached that are likely to limit what terrorist organizations are able to do. We agree with Simon and Benjamin (Simon and Benjamin 2001) state sponsorship carries the burden of a supplier who is motivated to avoid retaliation or war. The targeting of aviation which is very likely to kill hundreds is exactly the kind of attack that many state sponsors is likely to want proxies to avoid. Thus we believe that:

Hypotheses 6: Organizations that are sponsored by states are less likely to target aviation.

The Importance of the Environment

Terrorist organizations operate and plot their attacks, within specific environments. Some of these environments are likely to make attacking high value targets like aviation more easy and some are likely to make such attacks harder. Despite the amount of money that advanced democracies spend on the projection of air travel, their commitment to civil liberties make the planning and carrying out of attacks easier than in autocracies (Ross 1993; Eubank and Weinberg 2001) because there are fewer checks both literally and figuratively on what organizations can work on out of public view. We believe this should make the planning and the carrying out of aviation attacks easier. On the other hand, states that are highly militarized are more likely to have both the capacity and regimentation to prevent organizations that are based in these countries to prevent attacks. Thus:

Hypotheses 7: Organizations that are located in democracies are more likely to target aviation.

Hypotheses 8: Organizations that are located in more militarized societies are less likely to target aviation.

Data and Method

This paper uses the Big Allied and Dangerous (BAAD) dataset. The starting point of this data set was the extensive but unstructured dataset from the Memorial Institute for the Prevention of Terrorism (MIPT) titled the Terrorism Knowledge Base (TKB). TKB was unique in that it covered both domestic and international incidents, contained appropriate (though often incomplete) organizational indicators, and a treasure trove of data on dyadic linkages. While there are databases that cover incidents globally (see, for instance the ITERATE dataset and the

Global Terrorism Database – Mickolus 2004; National Consortium for the Study of Terrorism and Responses to Terrorism 2007), there were, as far as we know, no other databases that combine organizational indicators, organizational behavioral measures (such as lethality, propensity to kill Americans, etc.), and network data. From this starting point, BAAD filled in missing data, added organizations, and subtracted duplications. The data set has one observation for 395 terrorist organizations covering the years 1998-2005. The dataset is available at <http://www.albany.edu/pvc/data.shtml> . In addition to data from BAAD we draw on data from from the Correlates of War (COW) (Correlates of War II 2004)and POLITY IV datasets (Marshall et al. 2006).

Of the 395 organizations in the BAAD data set, only 18 (or about five percent) have attacked aviation targets. The organizations that have done so are listed in table 1 below. On first glance the organizations are a very diverse list that does not seem to have any attributes that would suggest one common factor that might account for this behavior.

Table 1: Organizations that have targeted Aviation

Basque Fatherland and Freedom (ETA)
Battalion of the Martyr Abdullah Azzam
Communist Party of Nepal-Maoists (CPN-M
For a Revolutionary Perspective
Free Aceh Movement (GAM)
Kakurokyo
Kayin National Union (KNU)
Moro Islamic Liberation Front (MILF)
National Liberation Army (Colombia)
People Against Gangsterism And Drugs
Real Irish Republican Army (RIRA)
Revolutionary Armed Forces of Colombia
Riyad us-Saliheyn Martyrs' Brigade
Saif-ul-Muslimeen
Taliban
UNITA
al-Qaeda
al-Qaeda Organization in the Land of the Two Rivers

The model was tested using a standard logistic regression using Stata 9.2. Because terrorist organizations are often based in the same country, we could not assume that all observations were independent of one another. To account for this, we adjusted the standard errors for country-level clustering. Since the model is nonlinear and thus more difficult to interpret, we used Stata's post-estimation commands to predict the probability of attacking an aircraft or airport as one varied the value of the an independent variable of interest, holding all independents at their mean. In addition, given the outlier nature of Al Qaeda we ran the analysis both with and without Al Qaeda in the model. Table 2 is a list of descriptive statistics for the variables we used. Table 3 provides results for our analysis without Al Qaeda. The analysis

that included Al Qaeda was substantively the same except that degree had a much larger probabilistic impact and was significant in a one tailed test (these results are available in an online appendix). Table 4 gives the change in probabilities when the variable moves from its minimum value to its maximum value using the Stata command prchange.

Table 2: Descriptive Statistics

Variable	Mean	Std. Dev.	Min value	Max value
Binary variable indicating if organization targeted aviation	0.046	0.209	0	1
Binary variable indicating if organization is religious	0.294	0.456	0	1
Number of years the organization has been in existence	11.271	12.165	1	87
Binary variable indicating if organization has committed more than 20 attacks	0.081	0.273	0	1
Number of connections to other terrorist organizations	1.387	2.543	0	33
Military personnel divided by total population	0.010	0.009	0	0.032
Polity2 score	5.192	6.679	-10.000	10
Binary variable indicating if organization is environmentalist	0.0127	0.1119	0	1
Binary variable indicating if organization is anarchist	0.0886	0.2845	0	1
GDP per Capita	10459.050	8801.983	478.708	29884.990
Binary variable indicating if organization has state sponsorship	0.081	0.273	0	1

Table 3: Logit Results with the dependent variable being a binary variable of attacks against aviation targets (Note the variables for environmentalist and anarchist ideologies could not be used because they predicted the outcome perfectly).

	Coefficient	robust Standard Errors
Religious?	-0.032	0.594
Age	0.040*	0.021
More than 20 attacks	2.833***	0.567
degree	0.201*	0.109
Military Personnel per Capita	-	40.612
Polity2	-0.174***	0.051
GDP per Capita	0.000	0.000
State Sponsorship	-1.387**	0.663
_cons	-3.503	0.695
*** significant at $p < .01$ using a one-tailed test		Number of obs = 394
** significant at $p < .05$ using a one-tailed test		Wald chi2(8) = 41.86
* significant at $p < .05$ using a two-tailed test		Prob > chi2 = 0.0000
		Pseudo R2 = 0.3510

Table 4: Change in probabilities when the variable moves from its minimum value to its maximum value using the Stata command prchange

Variable	Change in probability
Age	0.151*
More than 20 attacks	0.105
degree	0.238*
Military Personnel per Capita	-0.047
Polity2	-0.112
State Sponsorship	-0.008
Note: Based on variable that is only significant at $p < .05$ using a two-tailed test	

Analysis and Conclusion

The first thing to point out in the analysis is that two of the ideology variables were not able to be used because they had not variance. None of the environmental organizations or the anarchist organizations in our dataset were involved in aviation attacks between 1998-2005. This is fairly strong support for hypothesis 1. These kind of organizations simply did not engage in this kind of behavior. On the other hand we found no support at all for our other ideology hypothesis (2) related to religious organizations. The religious nature of the organization makes no statistical difference on whether or not that organization will target aviation. We are frankly surprised by this finding and plan to investigate it further.

When it comes to our hypotheses about the impact of experience and knowledge (3,4,5) our arguments were supported but there is a caveat. Both of the variables for network connections and age were only significant with a two tailed test. Groups that were very active though were more likely to be involved in aviation attacks with a one tailed test and the probabilistic impact of all of these variables is fairly large. The number of connections (degree), that an organization had was the factor that had the largest impact but both age and groups with a large number of attacks were 10% or more likely to engage in aviation attacks. On the other hand state sponsorship (hypothesis 6) had a significant and negative impact as we predicted but the impact was negligible.

The environmental factors were both significant but only one was in the direction we predicted. The level of militarization of a society (hypothesis 8) had a lesser but still significant and negative effect on the likelihood that organizations based in such countries would launch aviation attacks. Surprisingly (at least for us) democracy (hypothesis 7) had the effect of making aviation attacks by organizations based in such countries appreciably **less** likely. This

is a finding that we are still trying to understand given the impact that the literature predicts that a greater degree of openness in a democratic society is supposed to have.

While we found support for most of our hypotheses we are not fully satisfied with this model. This is one of the first efforts to look at why organizations target aviation as opposed to focusing on the terrorism – counterterrorism equation at the state level. One of the results we believe at this point is that there is a great deal of theorizing to be done that we hope will lead to the identification of a stronger array of explanatory factors that will give us better traction on this critical question.

Bibliography

- Ackerman, Gary A. 2003. "BEYOND ARSON? A THREAT ASSESSMENT OF THE EARTH LIBERATION FRONT." *Terrorism & Political Violence* 15 (4):143-70.
- Archick, K, C Ek, P Gallis, FT Miko, and S Woehrel. 2007. "European Approaches to Homeland Security and Counterterrorism." *Terrorism Issues and Developments*:1.
- Arciszewska, A, J Horning, P Phenow, R Wilson, and D Levinson. "Security vs. Efficiency: Assessing Transportation Security Policies and Trade-Offs."
- Arquilla, John, and David F. Ronfeldt. 2001. *Networks and Netwars: The Future of Terror, Crime, and Militancy*. Santa Monica, CA: RAND Corporation.
- Byman, D. 2001. *Trends in Outside Support for Insurgent Movements*: RAND Corporation.
- Byman, Daniel. 2005a. *Deadly Connections: States that Sponsor Terrorism*. New York: Cambridge University Press.
- . 2005b. "Passive Sponsors of Terrorism." *Survival* 47 (4):117-44.
- Correlates of War II. 2004. *National Material Capabilities (v3.01)*, March 26 2004 2004 [cited November 20 2004 2004]. Available from <http://cow2.la.psu.edu/>.
- Coughlin, CC, JP Cohen, and SR Khan. 2002. "Aviation security and terrorism: A review of the economic issues." *REVIEW-FEDERAL RESERVE BANK OF SAINT LOUIS* 84 (5):9-24.
- Diani, M., and D. McAdam. 2003. *Social Movements and Networks: Relational Approaches to Collective Action*: Oxford University Press.

- Douglas, M, and A Wildavsky. 1983. *Risk and culture: An essay on the selection of technical and environmental dangers*: Univ of California Pr on Demand.
- Drake, C.J.M. 1998. "The Role of ideology in Terrorists' Target Selection." *Terrorism & Political Violence* 10 (2):53.
- Dugan, Laura, Gary Lafree, and Alex R. Piquero. 2005. "TESTING A RATIONAL CHOICE MODEL OF AIRLINE HIJACKINGS." *Criminology* 43 (4):1031-65.
- Enders, W., and T. Sandler. 2006. *The Political Economy of Terrorism*: Cambridge University Press.
- Enders, Walter, and Todd Sandler. 2000. "Is Transnational Terrorism Becoming More Threatening? A Time-Series Investigation." *Journal of Conflict Resolution* 44 (3):307-32.
- . 2002. "Patterns of Transnational Terrorism, 1970-1999: Alternative Time-Series Estimates." *International Studies Quarterly* 46 (2):145.
- . 2004. "What Do We Know About the Substitution Effect in Transnational Terrorism? ." In *Research on Terrorism*, ed. A. Silke. London: Frank Cass.
- Eubank, William, and Leonard B. Weinberg. 2001. "Terrorism and Democracy: Perpetrators and Victims." *Terrorism & Political Violence* 13 (1):155.
- Frederickson, HG, and TR LaPorte. 2002. "Airport security, high reliability, and the problem of rationality." *Public Administration Review*:33-43.
- Goffman, Erving. 1974. *Frame Analysis*. Cambridge, MA: Harvard University Press.
- Gressang IV., Daniel S. 2001. "Audience and Message: Assessing Terrorist WMD Potential." *Terrorism & Political Violence* 13 (3):83.
- Hannan, M. T. and Freeman, J. 1989. *Organizational Ecology*. Cambridge, MA: Harvard University Press.

- Hoffman, Bruce. 1995. "'Holy terror': The Implications of Terrorism Motivated by a Religious Imperative." In *Studies in Conflict & Terrorism*: Taylor & Francis Ltd.
- . 1997. "The Confluence of International and Domestic Trends in Terrorism." In *Terrorism & Political Violence*: Frank Cass & Company Ltd.
- . 1999. "Terrorism Trends and Prospects." In *Countering the New Terrorism*, ed. I. O. Lesser, B. Hoffman, J. Arquilla, D. Ronfeldt and M. Zanini. Santa Monica Rand.
- Howitt, A, and J Makler. 2005. "On the ground: Protecting America's roads and transit against terrorism." *The Brookings Institution Series on Transportation Reform*.
- Jackson, Brian A. 2001. "Technology Acquisition by Terrorist Groups: Threat Assessment Informed by Lessons from Private Sector Technology Adoption." *Studies in Conflict & Terrorism* 24 (3):183-213.
- Jensen, Richard Bach. 2001. "The United States, International Policing and the War against Anarchist Terrorism, 1900-1914." In *Terrorism & Political Violence*: Frank Cass & Company Ltd.
- Juergensmeyer, Mark. 2003. *Terror in the Mind of God : The Global Rise of Religious Violence*. Third ed. Berkley: University of California Press.
- Kaplan, J. 1995. "Right Wing Violence in North America." *Terrorism and Political Violence* 7 (1):44–95.
- Karagiannis, E., and C. McCauley. 2006. "Hizb ut-Tahrir al-Islami: Evaluating the Threat Posed by a Radical Islamic Group That Remains Nonviolent." *Terrorism and Political Violence* 18 (2):315-34.
- Khagram, S., J. V. Riker, and K. Sikkink. 2002. *Restructuring World Politics: Transnational Social Movements, Networks, and Norms*: University of Minnesota Press.

- Lapan, H. E., and T. Sandler. 1988. "To Bargain or Not To Bargain: That Is The Question." *The American Economic Review* 78 (2):16-21.
- Lash, S. 2000. "Risk culture." *The risk society and beyond: critical issues for social theory*:47–62.
- Lee, M. F. 1995. "Violence and the Environment: The Case of Earth First!." *Terrorism and Political Violence* 7 (3):109-27.
- Lia, Brynjar, and Katja H. Skjolberg. 2004. "Why Terrorism Occurs: A Survey of Theories and Hypotheses on the Causes of Terrorism." *Journal of Conflict and Violence Research* 6 (1):121-63.
- Loukaitou-Sideris, A, BD Taylor, and CNY Fink. 2006. "Rail transit security in an international context: lessons from four cities." *Urban Affairs Review* 41 (6):727.
- Marshall, MG, K Jagers, and TR Gurr. 2006. "Polity IV Project: Political Regime Characteristics and Transitions, 1800–2004." *Maryland: Center for International Development and Conflict Management, University of Maryland, College Park.*
- McCormick, Gordon H. 2003. "TERRORIST DECISION MAKING." *Annual Review of Political Science* 6 (1):473-507.
- Quillen, Chris. 2002. "A Historical Analysis of Mass Casualty Bombers." *Studies in Conflict & Terrorism* 25 (5):279-92.
- Ross, Jeffrey Ian. 1993. "Structural Causes of Oppositional Political Terrorism: Towards a Causal Model." *Journal of Peace Research* 30 (3):317-29.
- Sageman, Marc. 2004. *Understanding Terror Networks*. Philadelphia: University of Pennsylvania Press.
- Sandler, T., and W. Enders. 2004. "An Economic Perspective on Transnational Terrorism." *European Journal of Political Economy* 20 (2):301-16.
- Simon, Steven, and Daniel Benjamin. 2001. "The Terror." In *Survival: International Institute for Strategic Studies*.

- Tarrow, Sidney. 1993. *Power in Movements*. Cambridge: Cambridge University Press.
- Taylor, Bron. 2003. "THREAT ASSESSMENTS AND RADICAL ENVIRONMENTALISM." *Terrorism and Political Violence* 15 (4):173-82.
- Taylor, Bron. 1998. "Religion, Violence, and Radical Environmentalism: From Earth First! to the Unabomber to the Earth Liberation Front." *Terrorism and Political Violence* 10 (4):10-42.
- Tilly, Charles. 2003. *The Politics of Collective Violence*. Edited by C. Tilly. Cambridge: Cambridge University Press.