

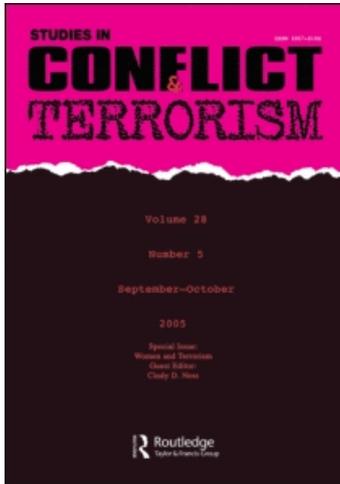
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Has the Global War on Terror Changed the Terrorist Threat? A Time-Series Intervention Analysis

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Has the Global War on Terror Changed the Terrorist Threat? A Time-Series Intervention Analysis

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Whether the Global War on Terror (GWOT) has changed the terrorist threat is a matter of controversy. This study, using transnational terrorism events data from 1993 through 2004, employs a time-series approach to investigate the extent to which the onset of the GWOT (beginning with the invasion of Afghanistan) and related events (the invasion of Iraq, the capture of Saddam Hussein, and the release of photos from Abu Ghraib) are associated with changes in transnational terrorist activity, its frequency, dispersion, lethality, type of attack, and type of victim of transnational terrorist incidents.

The 31-year-old Arthur Ashe was a long shot when he walked onto the court for the Wimbledon final against Jimmy Connors in 1975. Connors, with his driving ground-strokes, was clearly the more powerful player. His aggression had been described as being like Hemingway's depiction of gunfire: "You see the flash, then you hear the crack and at last the shell comes." Ashe was nimble and quick and said to play tennis like chess, but no one expected him to win. This, after all, was his eleventh Wimbledon. In almost no time, however, Ashe took control and made everything as difficult as possible for Connors. He was patient. He meditated between points. He played to the crowd. Then, as one commentator described it, he "lobbed, dinked, teased, passed, out-rallied and frustrated the "odds-on favorite" (Grey 1975). In the end, he beat the reigning champion by focusing on an indirect strategy that completely undercut his opponent's power.

The outcome was not one that was anticipated, but it illustrates a point that is relevant to the study of conflict. Although since Thucydides it has been assumed that power always wins, this is not necessarily the case. The weaker side sometimes does win asymmetric conflicts. In fact, the weaker side has been shown to be victorious in as many as 30 percent of asymmetric conflicts over a 200-year period. Moreover, weak actors have been increasingly victorious over time (Arreguin-Toft 2001). Today, as the strongest nations of the world combat terrorism from an admittedly weak opponent, that of substate or nonstate

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Replication data and results discussed in the text are available from the author. The theory and evidence presented in this article are developed at greater length in the author's book, *The War on Terror and the Transformation of Terrorist Activity* (Cambria Press, 2008). The author is Visiting Professor at the Institute for Conflict Analysis and Resolution at George Mason University.

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terrorists, the lesson from Ashe's match against Connors is an important one. Overwhelming force does not always spell victory in asymmetric conflicts. Sometimes, it has the opposite effect and a weaker adversary, using the right strategy, may score more points rather than fewer and force a stronger actor to back down.¹

In the aftermath of the 9/11 Al Qaeda attacks on New York and Washington, the Bush administration began to articulate a strategy of preemptive force in reference to the threat of what it called "global terrorism" or "terrorism of global reach." A basic assumption behind this strategy was the notion that terrorist operatives and resources needed to be taken out, *preemptively*, before they could mount attacks.² But whether the ensuing Global War on Terror (GWOT) has reduced or otherwise changed the nature of transnational terrorism is a matter of debate. As the U.S. presidential elections approached in 2004, the Bush administration claimed that as a result of the wars in Afghanistan and Iraq (both articulated as part of the GWOT), Al Qaeda had lost its sanctuary, three fourths of its leadership were captured or killed, the remnants were now on the run, and the ability of this group and its associated and affiliated organizations to conduct terrorism had been severely limited. Nonetheless, it was struggling with increasing fallout from evidence of alleged U.S. abuse of Iraqi prisoners at Abu Ghraib and in this climate, scholars such as Lake argued that the new strategy of preemptive force was an "overreaction" and precisely the kind of overreaction the perpetrators of 9/11 aimed to provoke (Lake 2002). According to this view, the Bush administration strategy of force had inflamed moderates in the Muslim world and increased Al Qaeda's recruiting power and operational capacity.³ As a result, some observers believed that Al Qaeda had only "morphed" into a looser organization with greater support and more offshoots and associated organizations, which were now engaged in more terrorist activity than ever before.

There is a need for more research on the relationship between the use of force and transnational terrorist activity. This need is particularly pressing because some members of the Bush administration have redefined the criteria by which success in the Global War on Terror is measured. For example, at the end of 2005, in relation to the war in Iraq (which has been described as a central front in the War on Terrorism), U.S. Secretary of Defense Donald Rumsfeld (2005), stated:

To be responsible, it seems to me, one needs to stop defining success in Iraq as the absence of terrorist attacks. As Senator Joe Lieberman recently suggested, a better measure of success might be that a vast majority of Iraqis, tens of millions, are on the side of the democratic government while a comparatively small number are opposed to that government.

This author disagrees. Establishing a democratic government in Iraq may be a laudable goal. But the success of the Global War on Terrorism needs to be measured in terms of terrorism and its incidence, not other accomplishments. To score it otherwise, in this author's opinion, is to change the rules.

Has the Global War on Terror, with its underlying strategy of massive preemptive force decreased transnational terrorist activity, or has it had the reverse effect and widened this threat? And to what extent have related events, including the invasion of Iraq, the capture of Iraq's former dictator, Saddam Hussein, and evidence, after Abu Ghraib, of U.S. soldiers abusing Iraqi detainees, affected this dynamic?

Little systematic empirical analysis has been conducted to estimate the effect of the War on Terrorism, or its associated events, on transnational terrorism. This study, using transnational terrorist events data, tries to assess empirically whether the War on Terrorism,

beginning in the aftermath of 9/11, has increased, decreased, or changed transnational terrorism in other ways. The article uses the term War on Terrorism to designate the overall interventions taken by the United States and other countries to stop transnational terrorism. However, the article also examines the independent effects of the onset of the War on Terrorism, the war in Iraq, the capture of Saddam Hussein, and the release of photos from Abu Ghraib on subsequent transnational terrorist activity.

Literature Review

Previous Research

Previous studies, using quantitative techniques, indicate that offensive strategies on the part of governments have not had the intended effect of lowering domestic terrorism. Enders and Sandler (1993), for example, examined the impact of the U.S. raid on Libya in 1986. They found that the raid had the unintended consequence of escalating the level of terrorism as sympathizers subsequently lashed out against the United States and the United Kingdom. Brophy-Baermann and Conybeare (1994) studied the effects of Israeli raids after a series of Palestinian attacks on Israel. They found that the raids only had a short-term impact. Within 9 months, the level of attacks was the same as before the raids. Similarly, Mia Bloom (2004) found that the use of extended force, including bombings and border closings, by the Israeli government, only inflamed Palestinian public opinion and further mobilized support for militants. On the other hand, flexible policies combining a measure of responsiveness with an emphasis on law and public order were shown by Martinez-Herrera (2003) to reduce terrorist violence by Basque insurgents in Spain.

The qualitative literature also lends support to the claim that the use of massive force against insurgent violence has escalating effects. Using a case study approach, Woods (2003) examined the effect of the British government's decision to send troops to quell civil rights riots in Northern Ireland in 1969. At this time, the Provisional Irish Republican Army (PIRA) was relatively inactive. Within a year, however, a "resurrected" and more motivated PIRA was carrying out new attacks against the British. Similar effects were observed after the use of massive force to quell Islamic extremist acts of violence in Upper Egypt in the mid-1990s (Hafez and Wiktorowicz 2004).

An unresolved question is whether the use of force escalates or deescalates terrorist activity when the specific target is transnational terrorist activity. To the author's knowledge, only one quantitative study has tried to address this question. In that study, Enders and Sandler (2005) used quantitative methods to analyze whether transnational terrorist activity changed after 9/11 and the onset of the offensive War on Terrorism. The authors did not find any substantial change. That study, however, was limited to one database (ITERATE) and only extended through the second quarter of 2003. As a result, it does not capture the longer-term and potentially mobilizing effects of such events as the invasion of Iraq in March 2003, the capture of Saddam Hussein in December of 2003, and the release of photos of abuse from Abu Ghraib in April 2004.

How do Strategies of Force Affect Transnational Terrorism? Terrorists as Rational Actors. Rational choice models of terrorists posit that terrorists are goal-oriented, that they rank order preferences and calculate the costs and benefits of alternative courses of action to maximize preferences within budgetary constraints (Crenshaw 1981). Their goals may be nationalist, separatist, religious, Marxist, or other (Crenshaw 1981; Hoffman 1998; Wilkinson 1986). What is critical to this model is that terrorism is seen as a rational

purposeful method, one that may be used in asymmetrical contexts to raise grievances, to challenge a state or political entity, to show the perpetrating group's own power, to increase allies, gain support or recruits, get compromises, or simply raise the costs to those in power.

Terrorists as Resource Mobilizers. Resource mobilization models of terrorists take a somewhat different approach. Without denying that terrorists act rationally, they posit that the goals of terrorists are often not simply to maximize tangible benefits in the near term but to mobilize support to achieve longer-term goals. In this context, legitimate social movements (e.g., civil rights groups or religious social movements such as Hamas or the Muslim Brotherhood) may be used as resources by terrorists to mobilize moderates at points when governments or other powers crack down indiscriminately on a population. Lake (2002) posits that in these situations an extremist core may try to provoke a massive retaliation to turn or convert moderates in their own societies to their causes and increase recruitment.

The Effects of Force on Terrorism and Oppositional Violence. Governments and other organizations responding to terrorism have three potential responses. First, they can do nothing or simply engage in defensive measures (e.g., tighten security by fortifying embassies, enhancing border protections, and air passenger screening). Second, they can engage in targeted responses (e.g., conduct limited strikes on terrorist training camps, capture high profile terrorists in a police action). Third, they opt for massive military force with the goal of eradicating a terrorist group, eliminating the government that harbors it, and "preventing" the group and other potential supporters from carrying out future attacks.

The advantages and disadvantages of these responses are a matter of controversy. For years it was thought that "soft" responses to organized violence increased such activity while "harder" more forceful ones made it more difficult for challengers to conduct their operations (Della Porta 1996). Whether hard tactics actually decrease oppositional violence, however, has long been a matter of contention (Lichbach 1987). As Bueno de Mesquita (2005) observes, offensive measures may be undertaken to *prevent* future terrorist attacks. Such tactics, however, may have competing effects. While they may make it more difficult for terrorist organizations to operate, they can also drive a hard core further into an underground where they become more focused and more deadly (Lichbach 1987). In addition, cracking down may increase grievances and consequently terrorist recruitment (Rosendorff and Sandler 2005).

Insights from a variety of literatures suggest that the impact of force, as a counterinsurgent or counterterrorist strategy, may be modified by other variables, for example, the level of force, the level of discrimination of force, other shifts (e.g., an expansion of issues and parties), changes in information (and misinformation), and whether force disintegrates into "barbarism."

Approaching the problem from a social movement perspective, Hafez and Wiktorowicz (2004), in their analyses of counterterrorist and counterinsurgent efforts in Algeria and Egypt, found that high levels of force, applied indiscriminately, were more likely than more selective ones to have an escalatory effect. Similar observations were made by Gurr and Goldstone (1991) who found that the American bombings of Cambodian and Vietnamese villages drove peasants to join the ranks of revolutionary armies and by Alistair Horne (1987) who in his classic text, *A Savage War of Peace: Algeria 1954–1962*, showed that France's imposition of "collective responsibility" during Algeria's war of independence led to an increase in membership in the National Liberation Front (FLN).

Building on the classic work of conflict scholar, Morton Deutsch (1973), conflict scholars Pruitt and Rubin (1986, 64) observe that escalation in conflict tends to be greatest

when five other factors also operate. First, there is a shift from “light to heavy tactics.” Second, the conflict grows in size. Third, the number of issues expands and parties begin to see the other side as “evil.” Fourth, the number of parties proliferates as more and more people are drawn in. And fifth, goals on either or both sides change from “doing well” to winning and finally hurting the other. Moreover, grievances, feelings of injustice, and high levels of frustration add to escalation and lead to a “conflict spiral” producing a sense of crisis, and a situation in which escalation tends to persist and recur. In such situations, even other latent conflicts may become manifest fueling what Sandole (1998) has called an aggressive manifest conflict process. In some cases, according to Karklins and Peterson (1993), severe repression may become a “focal event” that marks a critical tipping point and has a cascading effect (Lohmann 1994). Francisco (2001) points out that backlash is a common occurrence after episodes of severe repression (e.g., the massacre of 530 people at Amritsar, India in 1919, the Soweto massacre in which as many as 1,000 were killed in South Africa in 1976, and the killing of 13 people on Bloody Sunday in Derry, Northern Ireland in 1972). In these cases, the aftermath was one of greater mobilization, a struggle against the state, and guerilla war.

There is also evidence that the impact of force may also be modified by information or misinformation. A key tenet of rational choice models, based on bargaining theory, is that war is an inefficient and suboptimal outcome because, as Fearon (1995) has put it, under most conditions, bargains exist that rational adversaries “would prefer to a risky and costly fight.” Fearon argues that escalation is more likely when misinformation or miscalculation of an adversary’s power or will or resources leads to a bargaining failure. According to this model, which is being extended to civil war and terrorism (Lake 2002; Lichbach 2005), combat helps both sides improve information and thus leads to capitulation, settlement, or shifts into lower level violence.

Coming from an asymmetric war perspective, Andrew Mack (1975) has argued that the key variable in asymmetric conflicts is resolve or will (see also Schelling 1963). According to this logic, big nations lose small wars, including those against guerillas and terrorists, when their will falters. This argument, put forth in “Why Big Nations Lose Small Wars,” is consistent with rational choice models that posit that rational actors will back down or shift into lower-level violence in the face of superior force or signaling of force. Arreguin-Toft (2001), on the other hand, has proposed that what is critical in such conflicts is “strategic interaction.” In his analysis of more than 200 asymmetric conflicts, he found that strong actors employing “direct” methods of military force (attrition or blitzkrieg) almost always fared poorly against weak actors who used “indirect” methods (e.g., guerilla war or terrorism). He attributes these results to the fact that weak actors have the advantage of time whereas stronger actors risk looking incompetent. Also, strong actors may become impatient and resort to “barbarism,” that is, the violation of traditional laws of war (e.g., indiscriminate bombings, rape, murder, or torture). These insights may be particularly relevant because terrorism, like guerilla warfare, has been defined as a form of irregular warfare.

Hypotheses

Extended to the dynamics of transnational terrorism and counterterrorism, the aforementioned observations suggest that terrorism is more likely to escalate (i.e., become more frequent and/or deadly) albeit with less complex attacks (e.g., bombings) under conditions when the counterterrorist response is one of massive indiscriminate force, as it was at the onset of the WOT, when the number of issues and/or parties expands, as it did at the

onset of the war in Iraq, when repression becomes a “focal point” or when military force disintegrates into barbarism and human rights evaluations as happened after the release of photos from Abu Ghraib. Conversely, more targeted responses such as the capture of an important leader (e.g., Saddam Hussein) may have a moderating effect on the frequency and lethality of transnational terrorism. A further expectation is that in reaction to massive force in one area of the world and the logistic difficulties of mounting attacks in that region, terrorism is likely to become more dispersed, that is, occur in a greater number of places (countries) than before. In addition, the present author expected that human rights abuses such as occurred at Abu Ghraib would have an inflaming effect, increasing incidents by so-called Islamist perpetrators. Finally, the present author expected that because the WOT has been a multinational effort, all of the interventions associated with this war would lead to an increase in incidents involving multinational victims (i.e., victims from more than one country).

Methods

Study Design

To test these hypotheses, the author used the time-series intervention design developed by Box and Tiao (1975). This approach is generally considered the strongest of the quasi-experimental approaches for evaluating the longitudinal effects of interventions. Druckman (2005) points out that the strength of this design “derives from the feature of multiple measures before and after an intervention.” Although randomization is missing, the time-series design enables a researcher to evaluate change in the context of a longer history of events. It also allows for an evaluation of the extent to which the change is sustained through time. This design has previously been used for analyses of the effectiveness of military offensives versus mediation in response to violence in the former Soviet Union (Mooradian and Druckman 1999), the effectiveness of retaliatory raids in response to terrorism (Brophy-Baermann and Conybeare 1994), the effects of UN conventions on terrorist activities (Enders and Sandler 1990), the impact of news reporting on subsequent terrorist incidents (Nelson and Scott 1992), and the impact of specific antiterrorist policies and defensive interventions on the choice of tactics of terrorism (Enders and Sandler 1993).

Data Sources. The author obtained transnational terrorism incident data for the period 1993–2004 from two database sources, the *International Terrorism Attributes of Terrorist Events* (ITERATE) (Mickolus et al. 2004)⁴ and the *RAND-MIPT Terrorism Incident Database*.⁵ The author chose to use two sources to obtain a richer, more comprehensive database than might be achieved with one source alone.⁶ The two sources use similar definitions of terrorism.

ITERATE defines a terrorist incident as “. . . the use, or threat of use, of anxiety-inducing, extra-normal violence for political purposes by any individual or group, whether acting for or in opposition to established governmental authority, when such action is intended to influence the attitudes and behavior of a target group wider than the immediate victims.”

RAND-MIPT defines terrorism as “. . . violence calculated to create an atmosphere of fear and alarm to coerce others into actions they would not otherwise undertake, or refrain from actions they desired to take. Acts of terrorism are generally directed against civilian targets. The motives of all terrorists are political, and terrorist actions are generally carried out in a way that will achieve maximum publicity.”

Both data sets exclude incidents that are purely criminal (e.g., drug trafficking) even if carried out by a terrorist organizations; incidents associated with guerilla attacks on military targets of an occupying force (e.g. insurgent or terrorist attacks on occupying forces in Iraq); incidents considered to be unintended, for example, when a tourist is killed in crossfire between a host military and guerillas; general rioting and protest; unsubstantiated threats. Both provide events data on transnational terrorist incidents (date, location, type of event, casualties, i.e., deaths or injuries if any, number and nationality of victims, and nationality of perpetrators if known).

Time Span. The author chose the beginning date of the time span (1 January 1993) so that the analysis could focus as directly as possible on the years in which the chief target of the Global War on Terrorism, namely Al Qaeda and its associated organizations, have waged their global campaign. (Al Qaeda, meaning “The Base,” was formed in 1989; it used the years 1990–1992 to establish operational capacity, recruit members, and conduct training. However, it was not until 1992 that its founder Osama bin Laden first called for *jihād* or “holy war.” (Stern 2003, p. 68)). The ending date (31 December 2004) encompassed the most recent data available for ITERATE. The disadvantage of a longer pre-event time series, such as that employed by Enders and Sandler in their analysis of terrorism after 9/11 as a watershed event, is the potential to dilute the effect of the War on Terrorism in relation to the decade before. The early 1990s witnessed the end of the Cold War and the demise of many types of leftist and anarchist terrorism. Transnational terrorism became less frequent and there was an expectation that this trend would continue. The early 1990s, however, also saw the start of what has been called a “new kind of terrorism,” more religiously motivated, less frequent, and more lethal. Because the Bush War on Terrorism specifically focused on the latter type of terrorism and its chief perpetrator, Al Qaeda, the author felt that the analysis should focus on changes in terrorist activity *since* the emergence of this group and its offshoots.

Independent and Dependent Variables. The overall focus of the analysis was the impact of the War on Terrorism on subsequent terrorist activity. To capture potentially independent effects of different interventions associated with the WOT, the following four independent variables were specified: (1) the *onset of the WOT* starting with the invasion of Afghanistan on 7 October 2001; (2) the *war in Iraq*, starting with the invasion of Iraq on 20 March 2003; (3) the *capture of Saddam Hussein* on 14 December 2003; and (4) the incident known as the *Release of Abu Ghraib photos* showing U.S. troops abusing Iraqi prisoners at Abu Ghraib on 29 April 2004.

After merging data from the two sources (ITERATE and RAND-MIPT) and eliminating duplicate incidents, the author extracted quarterly time series for the dependent variables using the following proxies for different aspects of terrorist activity. For frequency the author extracted quarterly (3 month) numbers of incidents and of days of incidents. For dispersion the author extracted quarterly counts of countries in which incidents occurred, quarterly counts of incidents in Middle Eastern or North African countries, and quarterly counts of incidents in predominantly Muslim countries. For lethality, the author extracted quarterly counts of fatal incidents (i.e., with at least one victim death, and of those with at least one victim injury). For type of attack, the author extracted quarterly numbers of incidents characterized as bombings, as hostage-takings, and assassinations. For type of victim, the author extracted the numbers of quarterly incidents with multinational victims and the numbers of quarterly incidents with U.S. victims. For apparently “Islamist” perpetrated incidents, the author extracted quarterly counts of incidents that were attributed in the

databases to groups identified with “Islamist” causes. (A listing of these groups is available from the author.)

Analysis. This study used the Autoregressive Integrated Moving Average (ARIMA) procedure developed by Box and Jenkins (1976) to estimate the independent effects of the GWOT and associated events on subsequent terrorist activity. This approach, recommended by Cook and Campbell (1979), is particularly suited to identifying shifts in time series associated with interventions.

Results

For the 12-year study period 1993–2004, the combined number of transnational terrorist incidents in ITERATE and RAND-MIPT was 5,596. Of these, 863 incidents (30 percent in ITERATE and 32 percent in RAND-MIPT) proved to be duplicates (i.e., descriptions of the same incidents occurring on the same day in the same location). The final merged data set contained a total of 4,733 transnational incidents. Of these 42 percent were exclusively from ITERATE, 40 percent were exclusively from RAND-MIPT, and 18 percent represented overlapping incidents (i.e., incidents present in both sources). The average number of incidents before the onset of the GWOT was 97.4 ± 49.2 per quarter.

To what extent was the GWOT associated with changes in transnational terrorist activity? The coefficients and significance of the effects associated with the four interventions of interest (Onset of GWOT, Invasion of Iraq, Capture of Hussein, and Release of Abu Ghraib Photos) are provided for each of the outcomes in Table 1. The percent change in outcomes associated with each intervention is depicted graphically in Figure 1.

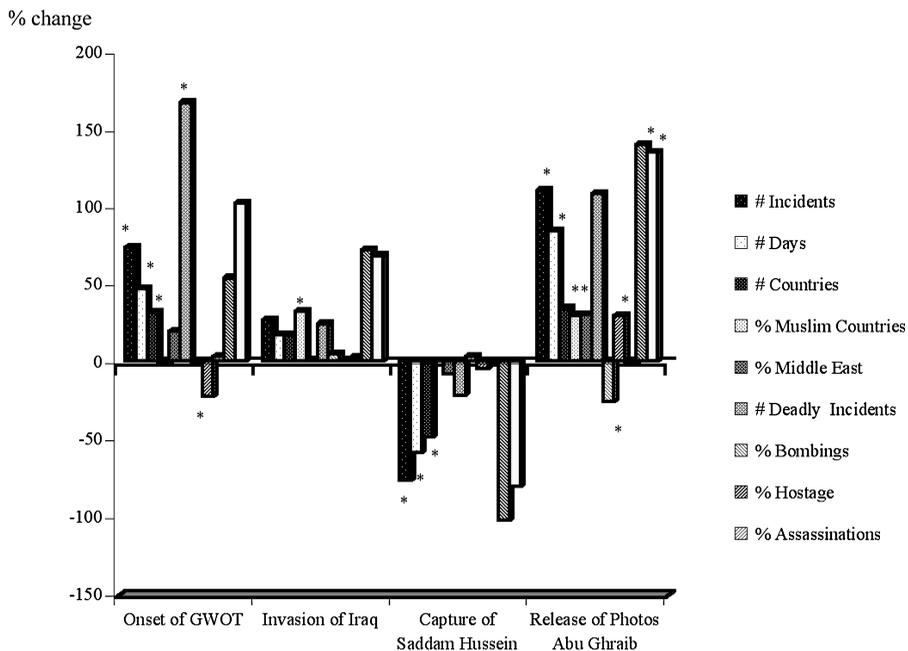


Figure 1. Summary graph of ARIMA results, all incidents.

Table 1
Summary table of time series (ARIMA) results

Outcome	Intervention	Coefficient	t-stat.	Prob.		% change
No. incidents						
	GWOT	0.735	4.534	0.0001	*	+74
	Invasion of Iraq	0.266	1.241	0.2222		
	Capture Hussein	-0.774	-2.030	0.049	*	-77
	Abu Ghraib	1.097	2.99	0.0048	*	+109
No. days						
	GWOT	0.467	5.185	0.0001	*	+47
	Invasion of Iraq	-0.0167	1.270	0.2119		
	Capture Hussein	-0.582	-2.350	0.024	*	- 59
	Abu Ghraib	0.843	3.538	0.0011	*	+84
No. countries						
	GWOT	0.288	3.162	0.003	*	+29
	Invasion of Iraq	0.205	1.572	0.124		
	Capture Hussein	-0.521	-2.199	0.034	*	-52
	Abu Ghraib	0.357	1.530	0.13		
% in Muslim cos.						
	GWOT	-0.018	-0.360	0.720		
	Invasion of Iraq	0.330	5.251	0.0001	*	+33
	Capture Hussein	-0.045	-0.446	0.659		
	Abu Ghraib	0.295	3.040	0.0044	*	+30
% in ME & N. Africa						
	GWOT	0.191	1.690	0.099		
	Invasion of Iraq	0.007	0.058	0.954		
	Capture Hussein	-0.077	-0.598	0.553		
	Abu Ghraib	0.296	2.228	0.028	*	+30
No. deadly						
	GWOT	1.676	7.836	0.0001	*	+168
	Invasion of Iraq	0.239	0.870	0.3899		
	Capture Hussein	-0.224	-0.403	0.6887		
	Abu Ghraib	1.086	1.919	0.063	^	+108
% deadly						
	GWOT	0.162	3.314	0.002	*	+16
	Invasion of Iraq	0.009	0.154	0.879		
	Capture Hussein	0.111	1.079	0.288		
	Abu Ghraib	0.0726	0.719	0.477		
% hostage takings						
	GWOT	-0.23	-5.67			
0.0001	*	-23				
	Invasion of Iraq	0.006	0.096	0.924		
	Capture Hussein	-0.0498	-0.463	0.646		
	Abu Ghraib	0.289	2.672	0.0111	*	+29

(Continued on next page)

Table 1
Summary table of time series (ARIMA) results (*Continued*)

Outcome	Intervention	Coefficient	t-stat.	Prob.		% change
% bombings	GWOT	-0.0157	-0.281	0.780		
	Invasion of Iraq	0.045	0.660	0.5129		
	Capture Hussein	0.030	0.260	0.796		
	Abu Ghraib	-0.26	-2.242	0.031	*	-26
% assassinations	GWOT	0.027	1.37	0.179		
	Invasion of Iraq	0.022	0.932	0.357		
	Capture Hussein	-0.016	-0.450	0.655		
	Abu Ghraib	-0.024	-0.66	0.511		
No. with multinational victims	GWOT	0.535	1.984	0.0545	^	+54
	Invasion of Iraq	0.719	2.022	0.0502	^	+72
	Capture Hussein	-1.031	-1.996	0.0532	^	-103
	Abu Ghraib	1.408	2.825	0.008	*	+140
No. with U.S. victims	GWOT	0.483	1.17	0.249		
	Invasion of Iraq	0.398	0.728	0.4713		
	Capture Hussein	-0.893	-1.232	0.226		
	Abu Ghraib	0.697	0.9723	0.337		
No. "Islamist" incidents	GWOT	1.027	1.676	0.1019		
	Invasion of Iraq	0.681	1.177	0.246		
	Capture Hussein	-0.806	-1.129	0.266		
	Abu Ghraib	1.353	2.02	0.0499	*	+135

Overall, the time-series results indicated a pattern of incidents declining after the breakup of the U.S.S.R. in the early 1990s and rising, with some dips, after the onset of the GWOT in 2003. As shown in Figure 1, the onset of the GWOT was associated with a 74 percent *increase* in transnational terrorist incidents ($p = .0001$) over and above the period before the GWOT while the release of photos from Abu Ghraib was associated with a 110 percent increase ($p = .005$) over and above the time period before this event. The invasion of Iraq was also associated with an increase over and above the period before the invasion (in this case of 26 percent) although this shift was not statistically significant. Contrary to expectation, the capture of Saddam Hussein was associated with a 77 percent *decrease* ($p = .049$) in transnational terrorist incidents compared to the full period before the capture. In raw numbers this means that compared to the pre-intervention period, the War on Terrorism added as many as 72 more incidents in a quarter whereas Abu Ghraib added over 100 and the capture of Saddam Hussein reduced the number by about 75 incidents. Consistent with

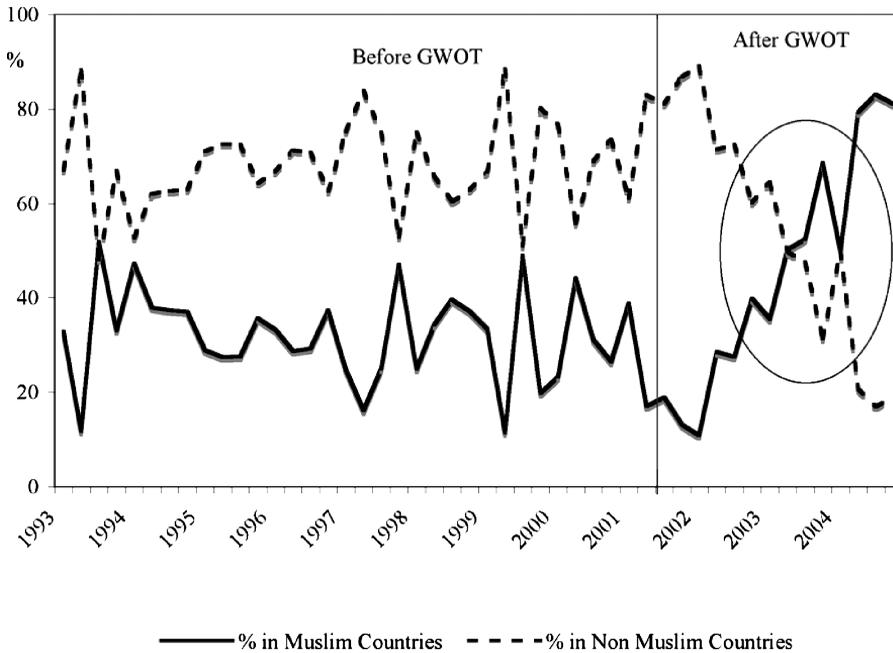


Figure 2. Change in incidents in predominantly Muslim and non-Muslim countries.

the rise in number of incidents, the onset of the GWOT and the Abu Ghraib incident were both associated with significant rises in the number of days of incidents.

The onset of the GWOT was associated with a more modest (29 percent) increase in dispersion (number of countries with incidents), whereas the capture of Saddam Hussein had the opposite effect, decreasing dispersion. Both the invasion of Iraq and the release of photos from Abu Ghraib were followed by significant rises in the percent incidence of transnational terrorist incidents in Muslim countries (Figure 2) and the Abu Ghraib incident was associated with upward shifts in the percent incidence in the Middle East and North African region.

The number of incidents with deaths was 168 percent higher after the onset of the GWOT and 108 percent higher after Abu Ghraib. Hostage-takings actually declined after the onset of the GWOT, but increased significantly after Abu Ghraib. Incidents with multinational victims increased by 50 percent after the onset of the GWOT but went up by as much as 140 percent after Abu Ghraib. Abu Ghraib was also associated with a significant rise, by as much as 135 percent, in incidents that could be attributed to “Islamist” groups.

When events in Israel and the Occupied Territories were *excluded* from the analysis of number of incidents and number of deadly incidents, somewhat different results were obtained. As shown in Figure 3 and Table 2, the onset of the War on Terrorism did *not* significantly increase the number of transnational terrorist incidents although it did still increase the number of deadly incidents. On the other hand, the invasion of Iraq and the release of photos from Abu Ghraib were both found to have significant statistical effects on the number of incidents and the number of deadly incidents. These results suggest that the invasion of Iraq, as well as Abu Ghraib, were key to subsequent transnational terrorism outside Israel and the Occupied Territories.

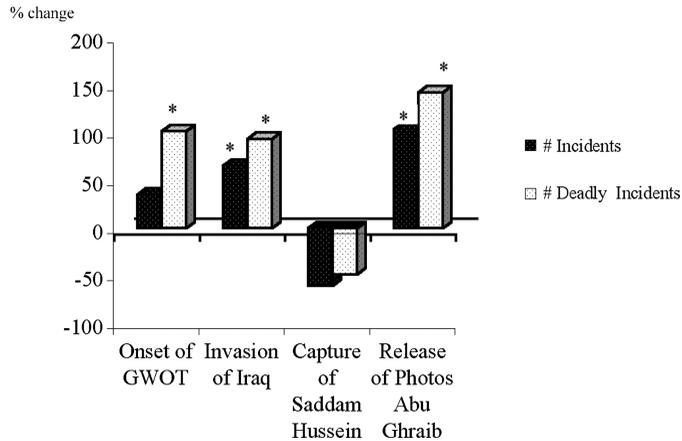


Figure 3. Summary graph of ARIMA results, Israel and Occupied Territories excluded.

Discussion

Time-series designs, because they are not experimental, cannot control for the counterfactual (what might have happened if no policy of preemptive force had been declared and no War on Terrorism had occurred). Nor can such designs prove that an apparently key or critical event was necessarily *the* key or critical event in the shift in a series of observations. It is always possible that other factors, over and above those studied, were more important. For example, in relation to the results of this study, it could be argued that the critical event was not the War on Terrorism and that the real catalyst was 9/11 itself. The argument could also be made that it is too early to measure the impact of the GWOT and a case could be made that different sources or measures (e.g., number of casualties instead of number of incidents with casualties) or different units of analysis (e.g., days or years rather than quarterly periods), or methods might produce different results. Still, the findings of this study are compelling.

Table 2

Summary of time series (ARIMA) results (Israel and the Occupied Territories excluded)

Outcome	Intervention	Coefficient	t-stat.	Prob.	% change
No. incidents	GWOT	0.35	1.59	0.12	
	Invasion of Iraq	0.657	2.163	0.037	* +65
	Capture Hussein	-0.601	-1.464	0.151	
	Abu Ghraib	1.04	2.70	0.014	* +104
No. deadly	GWOT	1.021	4.510	0.0001	* +102
	Invasion of Iraq	0.94	3.018	0.0045	* +94
	Capture Hussein	-0.484	-0.833	0.410	
	Abu Ghraib	1.428	2.488	0.0174	* +143

Theoretical Implications

From a theoretical perspective the results have several implications. First, they lend support to social movement/resource mobilization models of terrorism and they also extend conflict escalation theories to transnational terrorism.

Second, insofar as they show that escalating effects are magnified when force disintegrates into “barbarism,” as it did at Abu Ghraib, they lend support to and extend Arreguin-Toft’s theoretical construct of the negative effects of barbarism and violation of the laws of war in asymmetric conflicts. The release of photographs of U.S. soldiers’ abusing Iraqis was not, as Fareed Zakaria (2005) has put it, just “bad public relations”:

Ask any soldier in Iraq when the general population really turned against the United States and he will say, ‘Abu Ghraib.’ A few months before the scandal broke, Coalition Provisional Authority polls showed Iraqi support for the occupation at 63 percent. A month after Abu Ghraib, the number was 9 percent.

One lesson from the results presented here might be that if you brutalize the enemy there will be negative consequences.

Third, the evidence suggests that transnational terrorism may become more dispersed when larger numbers of countries join a military counterterrorism effort (as happened after the invasion of Afghanistan) and less dispersed when the coalition effort is smaller (as it was at the time of the invasion of Iraq). These results lend support to rational choice models in which terrorists maximize utility by adapting their efforts and tactics to achieve desired effects. While the change in dispersion may simply have been coincidental, it is likely that a tactic of more attacks in more countries was specifically designed by the leaders of some terrorist groups to deter governments from participating in further coalition efforts. Conversely, a tactic of concentrating attacks in a few countries, especially Muslim countries, after the invasion of Iraq, was undoubtedly designed to punish those governments that supported or turned a blind eye to that military effort. The change in dispersion has implications for collective action models of transnational terrorism. As Bueno de Mesquita (2005) observes, governments confronted with transnational terrorism face choices. They can choose to act in concert or they can “free ride.” One implication of the results found here is the possibility that when governments “free ride,” they may buy protection within their borders. Conversely, when they participate or lend support to a military coalition, they may take the brunt of the consequences. This was certainly true for countries such as Spain and Turkey and later England after the invasion of Iraq.

Fourth, as a caveat to observation three, the “free ride” may not be as free as it appears. Although dispersion decreased in association with the more limited coalition in Iraq, the number of incidents with multinational victims increased significantly. One implication of these results, which may be a function of the greater availability of multinational targets on the Afghan and Iraqi battlefields, is that a multinational military effort, no matter how large or small the coalition, may still make multinational groups of individuals and multinational organizations such as the UN and Red Cross more vulnerable.

Fifth, the evidence suggests that capturing or neutralizing a significant enemy leader is likely to have a deterrent effect, at least in the short term. Almost all of the measures of transnational terrorist activity studied here showed a downward turn after the capture of Saddam Hussein. Once again, these results may have been coincidental. However, it is also

likely that the capture of Iraq's former leader had a demoralizing effect and made it more difficult for terrorist recruitment.

Sixth, different interventions on the part of governments appear to provoke different responses from terrorists in terms of type of attack. In a previous study, Enders and Sandler (2005) found that the onset of the War on Terrorism, beginning with the invasion of Afghanistan, was associated with a decline in "logistically complex" types of attacks such as hostage-takings. They theorized that such attacks, which are costly in time and resources to mount, were disrupted by the War on Terrorism. They further theorized that *less* logistically complex attacks (bombings and armed attacks) were "substituted." The present results, using a larger data set, confirm these findings. As such, they lend support to the rational choice theory of terrorism and the concept of "substitution" effects. However, according to the evidence presented here, the release of photos of prisoner abuse from Abu Ghraib changed this trend. After Abu Ghraib, hostage-takings went up. Moreover, barbaric methods of treating hostages (beheadings) increased. These effects suggest that terrorists may calculate the utility of certain tactics on the basis of considerations such as symbolism, not just direct costs. In addition, and in support of resource mobilization models, it may be argued that Abu Ghraib was good (symbolically) for terrorist recruitment and hence made such "logistically complex" attacks more feasible.

Seventh, none of the interventions produced evidence of an upward or downward shift in the number of transnational terrorist incidents with U.S. victims. These findings, suggesting that the vulnerability of U.S. noncombatant targets remained the same, have major implications for policy. As has been repeatedly pointed out by members of the Bush administration, it is true that no catastrophic incident such as 9/11 has occurred on U.S. soil since the onset of the War on Terrorism. Nonetheless, given the cost of the effort in U.S. treasure and soldiers' lives lost, one might have expected to see a decline.

Finally, the evidence suggests that Abu Ghraib, more than any of the other events, was associated with significant increases in incidents by Islamist extremist terrorist organizations. These results, suggesting an emboldening effect, lend further weight to strategic interaction and resource mobilization models of terrorism. In addition, they highlight the important lesson that hard tactics plus barbarism do not have the desired effect of curbing terrorist activity and in fact the reverse is often true.

Policy Implications

The history of domestic terrorism indicates that terrorist groups often burn out when they lose outside support (Crenshaw 1991). However, history also shows that the use of coercive force by governments can have a stimulating effect and that force, especially when perceived as illegitimate, can radicalize moderates. In particular, as Clark McCauley (1991, 134) points out, it can "undermine restraints against the use of violence both nationally and internationally" and contribute to a "tit-for-tat upward spiral in the level and indiscriminateness of violence." In addition, the use of force, when perceived as illegitimate or unjust, can lead to what Ehud Sprinzak (1991, 50) has called a "crisis of legitimacy" in which ordinary people become so enraged that they begin to accept the logic of terrorism as a response to violence on the part of governments. If a heavy reliance on military force as a means of preempting transnational terrorism is not the most effective policy choice, what course should the United States take? The results presented here do not provide a blueprint for policy. A logical inference, however, is that new strategies need to be considered.

In 2001, the Turkish novelist Orhan Pamuk, when asked what motivated an old man in Istanbul to say he approved of the 11 September attacks or a Pakistani boy to admire the

Taliban, responded: "It is the feeling of impotence arising from degradation, the failure to be understood, and the inability of such people to make their voices heard" (Pamuk 2001). Pew polls have repeatedly shown that bin Laden's tactical goal of driving troops out of the Arab peninsula has resonance in the Muslim world. One policy implication of this study is that the United States needs to develop a plan to withdraw militarily from Iraq and the Arabian peninsula.

Bin Laden and his group and offshoots are also committed to mobilizing the Muslim world or what might be called "the Muslim Nation"—by projecting the confrontation with the United States and its coalition in Huntington's (1993) terms as a "a clash of civilizations" or as a battle of "Islam against infidelity" (Gunaratna 2002, 298). The results presented here suggest that terrorist mobilization and support were enhanced worldwide, but especially in the Middle East and in Muslim nations, after the release of photos of U.S. soldiers abusing and humiliating detainees at Abu Ghraib. Another policy implication is that the United States has to take a higher ground and renounce abuse and torture. Whatever its merits in terms of intelligence, its overall effect is counterproductive.

Tactically, Al Qaeda and its offshoots have mobilized support by focusing attention on conflicts the international community has previously avoided (e.g., conflicts in Kashmir and Chechnya). To decrease support for Al Qaeda and its offshoots and imitators, the United States and the international community may need to pay closer attention to the solution of such conflicts.

Al Qaeda and other such groups have also gained stature and legitimacy in parts of the Muslim world by doing "good works" and by associating themselves with Islamist movements that fill vacuums their countries have neglected (De Wijk 2002). Such groups are known to provide charity in their community. In addition, they provide an infrastructure for dissent against repressive governments. Today, Islamist political movements are gaining ground in many countries and in the words of the editor of the Dubai *Khaleej Times*, "the key political players in the Middle East" (Syed 2005). In June 2005, Hezbollah swept the elections in southern Lebanon and Hamas began to make inroads on the traditional Fatah party in Palestine. In Egypt, the government became so concerned about the rising support of the Islamist organization, the Muslim Brotherhood, that it excluded it from upcoming elections. In January 2006, Hamas scored an overwhelming victory in Palestinian elections, taking 76 out of 132 seats, and deposing the ruling Fatah party who won only 43 seats (Erlanger 2006). These are trends that the United States cannot afford to ignore. As Syed (2005), observes, "many Muslims blame the West for the suffering inflicted by their dictators." Moreover, polls from the Pew Research Center (2003, 2004) have shown that increasing numbers sympathize with the causes if not the tactics of extremist Islamist terrorist. To the extent that the United States continues to lump all Islamist groups together and does not distinguish between those committed to a pluralistic political process and those committed to violence, it will only increase resentment and in the words of visiting Carnegie Endowment Fellow Mustapha Kamel Al Sayyid (2003, 26) "play into the hands of those who use terrorism to further their objectives at home and against the west." Another policy implication of the results found here is that the United States needs to engage moderate Islamists and stop partnering with governments that abuse human rights.

Conclusion

The evidence from this study does not support the view of Ralph Peters (2004) that the United States or any other country can kill its way out of the problem or that reliance on

force alone is an effective means of reducing transnational terrorism. Earlier, the example of Jimmy Connors's famous tennis match against Arthur Ashe was used. Connors used force well. Indeed, it could be said that like the U.S. troops in Iraq, he produced "shock and awe," but Ashe, who had never before won such an important match, found a way to undercut his opponent's power. He moved Connors around, he changed the pace, he hit soft balls, and, every bit as importantly, he played to the crowd. A frustrated Connors pumped his fists and uttered profanities. But these antics only made things worse for the reigning champion. In the end, he lost because he had the wrong strategy.

Today, the United States is in a fight-to-die match against Al Qaeda and other groups that have declared war on the United States. In this match, the United States has scored points, but it has not always wanted to keep the score. To the extent that it fails to keep track of its opponents' attacks and continues to emphasize hard force at the expense of other strategies, it is unlikely to win. The United States needs to keep the score in this match (by regularly examining the impact of its strategies and tactics on its opponents' ability to mount attacks and play to a world audience). It may also need to mix up its tactics. With hard power alone, it is unlikely to succeed. With a mix of hard and soft power, and with restraints on the kind of profane and barbaric behavior that occurred at Abu Ghraib, it could still prevail.

Notes

1. See Arreguin-Toft (2001). See also Pape (2003), who argues that strategy has been key in the success of suicide terrorism, which he tallies has been effective in about 50 percent of the cases in which it has been used. He notes that it was effective in compelling American and French military forces to leave Lebanon in 1983, Israeli forces to abandon Lebanon in 1985, and Israeli forces to quit the Gaza Strip and West Bank in 1994 and 1995. He also suggests that it was effective in getting the Sri Lankan government to create an independent Tamil state from 1990 on and the Turkish government to grant autonomy to Kurds in the late 1990s. See also Dershowitz (2002).

2. The term "preemption" has been defined as striking an enemy as it prepares to strike. However, some observers have suggested that the Bush administration has expanded the definition to include "prevention," that is, striking an enemy even in the absence of specific evidence of an imminent attack. See O'Hanlon, Rice, and Steinberg (2002).

3. According to a 2002 United Nations report, Al Qaeda recruitment picked up in 30 to 40 countries during the period the United States began building up for the Iraq invasion (see Lynch 2002). According to a *CSIS* report, interviews of foreign fighters in Iraq indicated that images of abuse at Abu Ghraib were an important catalyst in their decision to fight (see Obaid and Cordesman 2005).

4. The International Terrorism: Attributes of International Events (ITERATE), which is available in a text as well as numeric format, provides a rich events data set of more than 13,000 incidents of transnational terrorism across 192 countries (as well as international organizations such as the UN) from 1968 through 2004. ITERATE data through 1978 is available through the Inter-University Consortium for Political and Social Research (ICPSR) at Ann Arbor Michigan. The data from 1979 through 2004 are proprietary and available for purchase from Edward Mickolus at Vinyard Software in Dunn Loring, VA.

5. The RAND-MIPT Terrorism Incident Database (1968–2008) is an extension of the RAND Chronology of International Terrorism. Until March 2008 it was available on the Web from the Oklahoma City National Memorial Institute for the Prevention of Terrorism at <http://www.tkb.org/Home.jsp>. The database, which includes approximately 10,000 incidents of international/transnational terrorism for the period from 1968–2004, was originally developed as an "uncoded textual chronology" of significant international terrorist incidents. It is currently being merged with the Global Terrorism Database (GTD) managed by the National Consortium for the

Study of Terrorism and Responses to Terrorism (START) at the University of Maryland. Among RAND terrorism analysts who have contributed to the RAND Chronology over time are such terrorism experts as Brian Jenkins, Bruce Hoffman, and more recently Michael Wermuth and Kim Cragin.

6. Previous published quantitative analyses of transnational terrorism have been limited almost exclusively to one proprietary database (ITERATE, Mickolus et al. 2004). The current author's own analysis of several years of ITERATE, however, indicates that it misses many items that fit its own definition of transnational terrorism and are covered in the text-based RAND-MIPT database originally compiled by terrorism experts Brian Jenkins and Bruce Hoffman. To make up for this shortfall, the author supplemented the ITERATE data set with RAND-MIPT data (which was coded following the ITERATE format). To the author's knowledge, no one has used the RAND data set for quantitative analyses because, while it has been publicly available on the Web, it has only been available in text format and coding is time consuming. Other databases also exist. In particular, the U.S. State Department compiles an annual series of transnational terrorist events. However, this data set is limited because definitions of what qualifies as international terrorism are influenced by U.S. policy preferences at a given time. For further discussion of this problem, see Falkenrath (2001).

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