

Terrorism in rational choice perspective

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1. Introduction

In the economist's model of rational human behavior, all individuals are assumed to be motivated by self-interest. They seek to maximize their senses of personal well-being, or utility, an objective that includes not only the satisfaction derived from consuming goods and services purchased on the market, but also the psychic pleasure associated with the attainment of any other desired end. What is of chief importance here is that self-interest is not to be understood narrowly as selfishness; the aim of economically rational economic man (or woman) is not solely to maximize private income or wealth. Other-regarding preferences indulged by actions such as providing aid and comfort to family and friends, bestowing charity on strangers or supporting a revolutionary cause fall within the ambit of the rational-choice model. So, too, does striving to gain entrée to a believed-in afterlife. Faced with a limited budget and unlimited wants, the problem confronting abstract economic man simply is to select the particular combination of market and non-market goods that, in the chooser's own judgment, yields the greatest possible level of satisfaction.

Terrorists are rational actors on that definition. Rationality in the spirit of *Homo oeconomicus* is not necessarily to be found in terrorists' stated intentions, though. Indeed, living in a "fantasy world" (Laqueur 1999, p. 28), the Red Army Faction (Baader-Meinhof Group), Italy's *Brigate Rosse*, France's *Action Directe* and other left-wing terror groups of the 1960s and 1970s generally had no well-articulated purposes beyond "destruction of the current Western system" of liberal democracy (Kellen 1990, p. 55) and no practical plans for replacing it, except perhaps, as in the pipedreams of their Russian nihilist forebears, with a "universally all-human social republic and harmony" (Dostoevsky [1872] 1994, p. 53).

But terrorists are rational in two important means-ends senses. First, while the globe is terrorist-target-rich, the resources commanded by individual terrorists and terrorist groups unavoidably are limited. Every terrorist faces a budget constraint and, whether acting alone or in concert with others, consequently must

deploy money, munitions and manpower cost-effectively, allocating the available resources over time and space so as to maximize terrorism's net returns, in whatever form those returns are expected to materialize. Second, terrorists respond rationally to measures taken to counter them. When some targets are hardened, they shift attention to softer ones. If a country elevates its counterterrorist efforts, terrorists move their operations to less vigilant states. Terrorists, in short, behave as if they are guided by the same rational-choice calculus that animates human action in more ordinary settings. They evaluate the alternatives available to them and choose the option that promises the largest expected benefit relative to cost; they respond, moreover, "in a sensible and predictable fashion to changing risks" (Enders and Sandler 2006, p. 11) and, one might add, to changing rewards. Many of the causes and consequences of terrorism are, in short, amenable to explanation by the economist's model of demand and supply.

This essay summarizes the theory and evidence that situates terrorism in a rational choice context.¹ Terrorism is first defined more precisely in Section 2. Attention then turns, in Section 3, to discussions of terrorists' rationality in selecting their targets and in responding to defensive countermeasures. Section 4 explores the logic of suicide terrorism. Section 5 concludes.

2. Terrorism defined

Irrational as it may seem at first blush, terrorist acts are goal-oriented. As defined by the US Department of State, terrorism is

premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents, usually intended to influence an audience. (Office of the Coordinator of Counterterrorism 1997, p. vi)

While other definitions of terrorism certainly have been advanced and, as a matter of fact, it is at times difficult to distinguish its perpetrators from "revolutionaries",² "insurgents", "freedom fighters", "martyrs" or ordinary criminals, modern scholarship attributes at least four distinctive characteristics to the terrorist program. First and foremost, terrorism is violence – or its threat – for political effect (Hoffman 1998, p. 15;

Sandler 2005). (In light of the emergence of Islamist terrorism and of the bloodshed caused by the Unabomber, Timothy McVeigh and the assassin of a guard at Washington, D.C.'s Holocaust Museum, one could well add religious and social goals to the list.) Second, terrorism is "a planned, calculated, and indeed systematic act" (Hoffman 1998, p. 15). Third, terrorists are not bound by established rules of warfare or codes of conduct (Ibid., p. 35)³ and, fourth, terrorism is "designed to have far-reaching psychological repercussions beyond the immediate target or victim" (Ibid., p. 43). "Terrorism is theater", as Brian Jenkins once said (Coll 2004, p. 139; also see Enders and Sandler 2006, p. 3).

2.1. The psychology and sociology of terrorism

It once was thought that terrorism's origins could be located in personal character traits predisposing individuals to rebellious and violent behavior, in conditions of poverty and powerlessness leading to disaffection and disengagement from society at large, and in the social dynamics of terrorist groups themselves: subservience to a charismatic leader or the solidarity and brotherhood – the "primary group cohesion" (McPherson 1997, p. 85) – that in small-numbers settings often leads those in harm's way to place the welfare of their comrades above their own (e.g., Reich 1990; Turk 2004).⁴

Scholarly work aimed at developing a composite personality profile of the archetypal terrorist has by and large been unsuccessful, however. Although "most terrorists have been young, some very young", and "the vast majority have been male" (Laqueur 1999, p. 80), no aspects of race, ethnicity, education, income, employment or social status conclusively can be said to distinguish terrorists from non-terrorists, either now or in the past. Nor, apparently, does terrorism have roots traceable to "genetic factors, psychological difficulties in early childhood, a disturbed family life, or identification with the underclass" (Ibid., p. 79). As a unique personality type, the representative terrorist does not exist: "there never was such a person" (Ibid.).

Even suicide attackers defy neat categorization: they "are not mainly poor, uneducated, immature religious zealots or social losers" (Pape 2005, p. 216). Indeed, if any conclusion can be drawn from the data on suicide terrorism since 1980, in which, except for attacks intended to advance the interests of Islamic

extremists, women have played ever more prominent roles, it is that, “especially given their education, they resemble the kind of politically conscious individuals who might join a grassroots movement more than they do wayward adolescents or religious fanatics” (Ibid.).⁵

2.2. Economic models of terrorism

In contrast to psychological and sociological approaches to the problem, economists attempt to understand terrorism's origins (as well as its targets) by focusing on relevant incentives and constraints.⁶ As it initially developed, the economics literature on terrorism divided along the lines of the subject's two main fields of study. One strand of the literature adopts a microeconomics perspective by assessing the costs and benefits of terrorist activity at the level of individual actors. The other strand examines the causes and effects of terrorism through the lens of macroeconomics by asking whether terrorism is more likely to emerge in conditions of high unemployment, slow or stagnant rates of economic growth and other indicators of poor national economic performance. An important related question is whether terrorism impairs a nation's economic performance; so, too, is the political economy question whether terrorism is driven by poor institutions of governance which, in addition to inhibiting economic development, block some individuals and groups from expressing their grievances at the polls, petitioning their political representatives, or pursuing other, non-violent courses of remedial action.

2.2.1. Micro terrorism

Terrorism has swept the globe in three distinctive, albeit overlapping waves since the end of the Second World War.⁷ The first of these terrorist waves arguably began on VE Day (8 May 1945) in the small North African market town of Sétif, when Muslim demonstrators demanding Algerian independence spontaneously turned violent, triggering a nearly weeklong cycle of bloodthirsty outrages against their *pied-noir* compatriots and indiscriminant reprisal by the French troops dispatched to restore order (Horne [1977] 2006, pp. 23–28; Shughart 2006, pp. 7–8). Aroused by the self-determination language of the Atlantic Charter and

unleashed by the post-war shrinking of the British and French colonial empires, the events at Sétif helped launch a wave of terrorist violence motivated in large part by the goals of ethnic separatism and national liberation. That first wave, which saw terrorist tactics deployed decisively in expelling foreign rulers and creating the new states of Algeria, Cyprus, Ireland and Israel, among others (Rapoport 2004, p. 53), ended with the airlifting to safety of the last American diplomat from the rooftop of the U.S. embassy in Saigon.⁸

The second post-war wave of terror was by then already well underway. It started on 22 July 1968, when Palestinian terrorists, acting to avenge Egypt's stunning defeat by Israel in the 1967 Six-Day War, hijacked an El Al passenger aircraft en route from Rome to Tel Aviv. Although it, too, was influenced to greater or lesser extent by ethno-nationalistic goals, the second wave precipitated by the hijacking elevated terrorism to the international stage as never before. The Popular Front for the Liberation of Palestine's publicity coup, which demonstrated the value of galvanizing public opinion, produced spillover effects by emboldening copycat terrorist groups in The Netherlands, Turkey and elsewhere. Left-wing movements in Europe and North America, frequently aided and abetted by the PFLP, the PLO and other Palestinian terrorist groups, animated by opposition to the Vietnam War and by anti-Americanism in general, and claiming solidarity with oppressed peoples of the Third World, embarked on self-styled revolutionary campaigns of political assassinations, bombings and hijackings (Kellen 1990). That wave of terror, also marked by hostage-taking extortion and garden-variety bank robbery, continued until the fall of the Berlin Wall in 1989, when the members of Italy's Red Brigade, West Germany's Red Army Faction,⁹ and their sister organizations no longer could be assured of financial support from – or safe haven in – the East.

The third wave of terror was set in motion prior to the Soviet Union's collapse by the Iranian Revolution of 1979 (Enders and Sandler 2000). It is still ongoing, pushed forward in Central Asia by the withdrawal of Soviet troops bloodied in their decade-long war against the *mujaheddin*, in the Middle East by hostility to American support for Israel, and inspired everywhere – from Algeria to Chechnya, Kashmir, Indonesia, the Philippines and beyond – by pan-Islamic visions of a new world order in which the

fundamentalist Muslim faithful, freed from western cultural contamination, would be united under a resurrected Caliphate and strictly enforced *Shar'ia* law.¹⁰

Whether the objective is to wreck the "system", to liberate a repressed ethnic or religious minority by creating a new nation-state, or to redress real or imagined grievances against an established governmental regime or colonial power, an individual's decision to engage in terrorist activity, alone or in an organized group, requires a weighing of the probable benefits and costs to himself or herself personally. Consistent with the rational-choice model, the terrorist may gain psychic rewards from successful commission of a violent act. The expected payoff might also be in the form of bounties or similar financial rewards; elevated status within the terrorist organization; appointment to public office if the group seizes political power; access to education, job training or social services otherwise unavailable to themselves and their families (Zakaria 2003, p. 142); compensation to relatives in the event of disablement or death; and even the promise of a martyr's paradise.¹¹

As a matter of fact, because the fruits of terrorism are something of a public good – the benefits of a successful terrorist act will be shared by all who support the terrorist's cause – such "selective incentives" often will be necessary to mitigate the free-rider problem that inevitably plagues collective action (Olson 1965; Rathbone and Rowley 2003). Russell Hardin (1995, p. 5) argues that "self-interest can often successfully be matched with group interest" when the members of one group become convinced that they are engaged in a zero-sum game, i.e., that the expected gains from collective action depend on "the suppression of another group's interest." The salient selective incentives may include sticks as well as carrots: the now-vanquished Tamil Tigers, for instance, allegedly recruited suicide terrorists by threatening their loved ones and by exploiting other means of coercion (Berman and Laitin 2006, pp. 25–26).

To an economist, the costs of becoming a terrorist include, first and foremost, the income that could have been earned in legitimate lines of work.¹² It is for this reason that Frey and Luechinger (2003) propose that policies increasing the opportunity cost of terrorists are more effective in curbing terrorism than is increasing the material cost of terrorism through deterrence alone.¹³ Faria and Arce (2005) elaborate on this theme by providing a theoretical model where both more effective deterrence and higher opportunity costs

lessen the popular support that is essential for recruiting potential terrorists. Other explicit costs relevant to the terrorist's rational-choice calculus are exposure to the risks of arrest, imprisonment, torture, bodily injury and, ultimately, loss of life.

Engaging in terrorism is not simply an either-or decision, however. Individuals can remain on the sidelines of a terrorist campaign, supply clandestine support to a terrorist group or join the opposition to it. Avoiding active participation may be the optimal choice if terrorism ultimately is suppressed, but also raises one's chances of becoming a statistic in the collateral damage of a terrorist attack. Should a terrorist campaign succeed, on the other hand, bystanders and latecomers will be denied opportunities to share in the spoils distributed among those who zealously backed the cause from the beginning. The members of the opposition face a similar social dilemma: rewarded if terrorism is effectively countered and subject to reprisal if not (Tullock 1974).

To paraphrase Carl von Clausewitz ([1832] 1976, p. 87), terrorism merely is a continuation of policy by other means. Animated during much of recent history by the goals of redressing the grievances of oppressed ethnic minorities or of achieving independence from colonial rule, terror often is the best available course of action because the supporters of the status quo control the levers of established governing power and can mobilize police and military forces that are larger, better equipped and better trained than are the cadres seeking to effect change. Moreover, as we have seen, the tactical and strategic advantages of asymmetrical warfare, as opposed to regular warfare, have proven to be successful in the terror campaigns leading to the independence of, among others, Algeria, Israel and Cyprus. The British and Soviet experiences in Afghanistan likewise are apt (Shughart 2002, 2006).

Target selection is among the most important of terrorists' comparative advantages. Because nation-states seeking to protect their homelands cannot possibly safeguard people and property everywhere, terrorist groups can attack wherever countermeasures remain ineffectual.¹⁴ Terrorists are well-positioned to exploit existing vulnerabilities because they typically are better informed about the strengths and weaknesses of a nation's defensive measures than the government is about the sizes, locations and resources available to

terrorist cells. Terrorist groups also are organizationally less hierarchical, operationally more independent and, hence, more innovative and more nimble in acting than public law enforcement and counterterrorism agencies are in reacting to threats (Sandler 2005). Jack Hirshleifer (1991) calls this asymmetry the *paradox of power*: "They strike at the outskirts of the camp. Then when we sound the call to arms, they vanish. This is the most demoralizing kind of warfare" (Vidal [1964] 1986, p. 428).

Terrorists do not have to defeat the governing regime militarily; they only have to avoid losing (Hoffman 1998, p. 52).¹⁵ In order to achieve their goals, however, they must marshal public opinion. Media attention is essential to the terrorist enterprise because terrorist groups do not in general aim to influence policy directly or necessarily even to elicit widespread sympathy for their cause. Terrorists instead choreograph their attacks mainly to intimidate, to produce "massive fear" (Cooper 2001, p. 883), thereby panicking an alarmed citizenry into demanding that national leaders stop the violence by somehow putting right the perceived wrongs that, at least in the minds of the perpetrators, justify their terror campaign. Creating a climate of fear requires fostering the belief that everyone is a potential target: "A man can face known danger. But the unknown frightens him" (Heinlein [1966] 1994, p. 75). Or, in terms more familiar to an economist, "there are few incentives more powerful than the fear of random violence – which, in essence, is why terrorism is so effective" (Levitt and Dubner 2005, p. 62).

It is for this reason that concentrating attacks on urban centers and targeting civilians are two of the prongs of a rational terrorist strategy. Incidents committed in metropolitan areas disrupt daily life there and command immediate media attention, both nationally and internationally. Publicity for "dramatic, well-orchestrated and appropriately timed acts of violence" (Rapoport 2004, pp. 57–58) both draws attention to the terrorist group's cause and raises popular estimates, perhaps overly so (Kahneman and Tversky 1979), of the risks to which ordinary people are exposed. Focusing on urban centers may also, as it did in Cyprus, hamstring official responses to terrorist threats by forcing troops to be dispersed citywide on static guard duty missions at scores of potential targets, none of which likely will be hit on any given day (Rapoport 2004, p. 58).

Target selection inevitably demands a weighing of expected costs and benefits because terrorist violence can, by producing indiscriminate death and destruction, turn public opinion against the responsible group (Crenshaw 1990, p. 17), compromising its ability to operate clandestinely, to raise needed funds and to recruit new members, all of which reduce its chances of success. Tradeoffs of similar kinds face those in charge of the counterterrorism effort. Governments, especially democratic governments, likewise are constrained by popular opinion. In addition to fostering a climate of fear, terrorist groups consequently can advance their interests by provoking officials into adopting repressive countermeasures that undermine civil liberties or simply inconvenience ordinary people enough that demands for protection from terrorism are transformed into opposition to the policies adopted to suppress it. Brutal reprisals and extensive security precautions may also serve a terrorist group's cause by contributing to public perceptions of its power (Ibid., p. 19), its "apparent ability to strike anywhere, anytime" (Rapoport 2004, p. 59), thereby by making it easier to recruit new members.

There were 5431 transnational terrorist incidents during the 1980s, claiming in total 4684 lives (Pillar 2001, p. 42).¹⁶ Terrorism's high-water mark during the post-Second World War period was reached in 1987, which recorded nearly 700 attacks (Enders and Sandler 2006, p. 41). Transnational terrorism has declined fairly steadily since then – the last decade of the twentieth century witnessed 3824 incidents and 2468 terrorism-related fatalities (Pillar 2001, p. 42) – but terrorism has become more lethal. While 19 per cent fewer terrorist events occurred in the second half of the 1990s than in the first half, the number of people killed by terrorists more than doubled (Ibid.; Enders and Sandler 2000).¹⁷ Terrorism's rising butcher's bill coincides with growth in the incidence of suicide attacks, which kill, on the average, anywhere from four (Hoffman and McCormick 2004, p. 269) to 13 people, compared with the one person who typically dies in a more ordinary event (Pape 2003). Suicide terrorism, which accounts for just three per cent of the terrorist attacks of the past 25 years, is 12 times more deadly than other forms of terrorism if 9/11 is excluded (Pape 2005, p. 8).

Although the rational-choice model generates predictions about terrorist behavior not amenable to explanation by other social sciences, information on individual terrorists is hard to come by, Pape (2003, 2005) perhaps being the outstanding, but not entirely criticism-free exception. Economists and other scholars attempting to understand the historical patterns in the numbers and types of terrorist incidents therefore have devoted their attention to available aggregate datasets that track terrorism's countries of origin and targets over time. Such macroeconomic analyses have contributed important insights into terrorism's causes and consequences.

2.2.2. Macro terrorism

It is by now well-established that liberal states uniquely are vulnerable to terrorist attacks (Wilkinson 1986; Weinberg and Eubank 1987; Eubank and Weinberg 1994, 2001; Li 2005).¹⁸ With their open borders, their respect for individual freedoms and the constitutional protections they offer for the rights of the accused, including those of non-citizens, democratic states supply favorable environments for terrorist groups, not only in which locate their operations but also in which to wage their violent campaigns (Enders and Sandler 2006, p. 24).¹⁹ The institution of a free press maximizes the opportunities available to terrorists for publicizing their grievances and creating a climate of fear in which everyone, no matter how low the risk actually may be, sees himself or herself as a potential target; democracies are especially vulnerable to hostage-takers owing to popular concern for citizens' lives (Rapoport [1992] 2004, p. 1064).

It is important to emphasize in this regard that terrorists do not tend to select targets in liberal states because they want to unseat those nations' democratically elected governments, but rather because they want to induce policy changes compatible with their interests by influencing audiences there. That objective explains why the United States, France and Great Britain are the major net "importers" of terrorism (Blomberg and Hess 2008b, p. 128)²⁰ and why in the recent past Americans overwhelmingly have been the targets of terrorist attacks. More than half of the international terrorist incidents in 1982, for instance, were directed

against U.S. citizens or property on foreign soil. Those terrorist events “occurred in 78 different countries and 45 percent of them took place in Western Europe” (Wilkinson 1986, pp. 105–106).²¹

Terrorism also can be quite costly. It impairs private capital investment and, hence, economic growth. Indeed, one estimate suggests that world GDP would have been \$3.6 trillion greater in 2002 had there been no terrorist incidents that year. That sum equals about one-third of U.S. GDP and exceeds the gross domestic products of Argentina, Italy and the United Kingdom combined. Put differently, reducing the number of terrorist attacks on the United States from three to two would have increased fixed capital investment there by \$5 billion and GDP by \$40 billion in 2002 (Crain and Crain 2006). The social costs of terrorism are considerably larger if one counts subjective losses in “life satisfaction” among survey respondents in terror-prone nations (Frey, Luechinger and Stutzer 2009).

Most of the existing scholarly literature finds the macroeconomic effects of terrorism generally to be quite modest and of limited duration, however. Despite the media attention paid to them, terrorist attacks are in fact quite rare and they have immediate impacts on people and property that, tragic as they may be, almost always are local in scope. The large and well-diversified economies of the developed world consequently are able to absorb the damage and recover from terrorist incidents fairly rapidly. The direct and indirect costs of 9/11, for example, estimated to have amounted to at most \$90 billion, represented a very small fraction of that year’s \$10 trillion American economy (Sandler and Enders 2008, p. 17). Real U.S. GDP growth dipped briefly in the third quarter of 2001, but then rebounded in short order (Ibid., pp. 26–28).

The evidence from studies tracking the experiences of large numbers of countries over long time horizons suggests that per capita income growth is lower in nations on the receiving end of terrorist attacks, but that terrorism’s macroeconomic impact is small and its statistical significance is sensitive to the inclusion of other control variables (Blomberg, Hess and Orphanides 2004; Tavares 2004). More substantial effects are found when the focus is narrowed to smaller nations or to specific sectors of their economies. Abadie and Gardeazabal (2003), for example, find that GDP per capita in Spain’s Basque region was 10 per cent below predicted trend over twenty years of the terror campaign launched by ethnic separatists. Eckstein and

Tsiddon (2004) report the same 10 per cent reduction in per capita GDP for Israel during the period of the second Intifada, which began in the third quarter of 2000 and ended in the fourth quarter of 2003; in percentage terms, fixed capital investment and exports both fell by twice as much (for estimates of the economic and political costs of the Intifada of 1987, see Fielding 2003). The evidence from small countries also suggests that tourism (Enders and Sandler 1991; Enders, Sandler and Parise 1992; Fleischer and Buccola 2002; Drakos and Kutan 2003), the commercial airline industry (Drakos 2004; Ito and Lee 2004), foreign direct investment (Enders and Sandler 1996) and international trade (Nitsch and Schumacher 2004) are particularly vulnerable to terrorist activities.

2.2.3. The political economy of terrorism

Numerous studies find that healthier domestic economic performance – higher per capita incomes and faster rates of economic growth – lowers the risk of violence of various kinds, including hate crimes (Green, Glaser and Rich 1998); “conflict”, broadly defined (Blomberg and Hess 2002; Blomberg, Hess and Thacker 2006); civil war (Collier and Hoeffler 2004) and terrorism (Krueger and Malecková 2003; Blomberg and Hess 2008a, 2008b; Blomberg, Hess and Weerapana 2004a).²² But such evidence begs an important question: Nations that rank near the top on indicators of economic development tend to have “good” institutions (Easterly 2000). The richer countries of the world are characterized by governments that safeguard citizens’ political and civil rights. Individuals are afforded opportunities freely to speak, peaceably to assemble, to vote in competitive elections and to petition the representatives they have chosen. Constitutional rules guarantee a free press, an independent judiciary and impose other constraints, including provisions for impeaching and removing public officials from their posts, which limit government’s ability to override the popular will. Perhaps it is not economic development per se, but rather the institutions of liberal constitutional democracy that mitigate the chances that differences between individuals and groups will spill over into bloody conflict, civil war and terrorist violence?

Answers to that question become all the more important owing to evidence that greater fractionalization along ethnic, linguistic or religious lines raises the probability that a nation either will be plagued by civil war (Montalvo and Reynal-Querol 2005)²³ or become a terrorist target (Kurrild-Klitgaard, Justesen and Klemmensen 2006).²⁴ Indeed, Easterly (2000) has suggested that ethnic fractionalization is an important driver of recurrent bloodshed on the African continent.²⁵ The reason seems to be grounded in politics: As Horowitz ([1985] 2000, p. 39) puts it, “a profusion of dispersed groups usually creates such great ethnic heterogeneity at the center that when the center intervenes it may do so as a neutral arbiter.” On the other hand, “in those states where a few groups are so large that their interactions are a constant theme of politics at the center[,] ... the claims of one group tend to be made at the expense of another: mutually exclusive demands characterize political debate” (Ibid.). Indeed, Esteban and Ray (1994) conclude that ethnic polarization – and its propensity for triggering violence – is greatest when a society is divided into two groups of similar size.

Building on the work of Krueger and Malecková (2003), Krueger and Laitin (2008) report evidence that terrorism is more likely to originate in countries where civil liberties are denied than where the people are divided sharply along sectarian lines (measured in terms of national population percentages of Muslims, Buddhists, Hindus and “other” religious groups). Krueger and Laitin (2008, p. 150) conclude from their analysis that, for reasons given earlier, the citizens of “open” democratic societies are more likely to be terrorism’s victims (Ibid., p. 167), but what is more important, that the origins of terrorism can be traced to “countries that suffer from political oppression” – those that deny “civil liberties” (Ibid., p 172). A key implication of Krueger and Laitin’s empirical study is that the threat of both domestic and transnational terrorism can be lowered by policies that advance the political and civil liberties of the peoples now living under repressive regimes which quash political opposition, actively sponsor the activities of terrorist groups (Iran, Saudi Arabia and Hamas’s “governors” of the Gaza Strip, for instance) or offer aid and comfort to terrorism’s perpetrators (Lebanon, Libya, North Korea, Pakistan and Somalia, to name a few).

But there is another important set of institutions that distinguish nation-states from one another. It is true that “poor” democratic governments and non-democratic governments alike are characterized by public corruption, low bureaucratic quality, pervasive disrespect for the rule of law and studious inattention to broader measures of policy accountability, such as rates of secondary school enrollments (Keefer and Loayza 2008, p. 8). It is also true, however, that governments can promote development by protecting economic liberties, that is, by respecting the rights of private property, resisting the temptation to expropriate it and refraining from repudiating contracts entered voluntarily by competent individuals.

Exploiting a dataset comprising observations on 118 countries from 1982 through 1997, Basuchoudhary and Shughart (2009) report evidence consistent with the ideas that transnational terrorism is more likely to originate in ethnically tense states and that “good” institutions can help break that link. They also find, however, that property rights may be more important than civil rights in reducing the odds that terrorism will find fertile ground where ethnic tensions are high. Indeed, while liberal political institutions were associated with the launching of significantly fewer transnational terrorist acts in the period following the end of the Cold War, that result did not hold prior to 1990. Stronger protections for economic liberties, on the other hand, lowered the number of attacks originating in a country throughout the full sample. As a matter of fact, when the quality of a nation’s economic institutions was controlled for, perceived ethnic tensions no longer explained transnational terrorism’s countries of origin.

The obvious policy implication of these findings is that the reforming of political institutions in states that now deny citizens’ civil liberties may be less effective in curbing transnational terrorism than the reforming of their economic institutions. It is well-known, after all, that, because of the advantages of incumbency, rational voter ignorance and the irrationality of voting in the first place (Downs 1957), elections alone do not tightly constrain governmental behavior, especially in a heterogeneous society where vote tallies often are nothing more than ethnic “head counts” – “the election is a census, and the census is an election” (Horowitz [1985] 2000, p.196). Offering stronger protections for private property rights, which provide incentives for starting businesses and interacting peacefully with others, may prevent ethnic differences from spilling over

into ethnic violence and transnational terrorist activity. In any case, the definition of “good” institutions merits further scholarly study.

3. Rational terrorists

As mentioned at the outset, terrorists are rational in two important means-ends senses. Owing to the superior numbers, training and firepower that can be brought to bear by the regular army and police forces arrayed against them, terrorists must select their targets and time their attacks carefully, searching out the most vulnerable of them, or what, in the context of public goods provision, Jack Hirshleifer (1983) calls the “weakest link”. Rationality in target selection also influences terrorists’ modes of attack – although detonating explosive devices historically has been the most common method of sowing terror,²⁵ aircraft hijackings, assassinations, kidnappings and hostage-takings are among the other available options – as well as their responses to the security measures adopted to thwart them. Terrorists and their opponents thus are engaged in a repeated game, characterized by a sequence of moves in which a terrorist incident elicits a defensive response and the countermeasure, in turn, prompts the attackers to shift to “softer” targets, to change their method of attack, or both.²⁷ As we shall see, such “policy-induced substitution” (Enders and Sandler 2006, p. 112) not only impacts the effectiveness of any one nation’s counterterrorism efforts, but also hinders international cooperation in the fight against terrorism. More to the point, scientific studies showing that terrorists actually do respond to counterterrorism policies in the predictable ways supply evidence that terrorists are in fact rational.

Analyzing a dataset comprising all hijackings of U.S. commercial aircraft between 1961 and 1976, William Landes (1978) found that countering that threat by installing metal detectors at domestic airports to screen boarding passengers early in 1973 resulted in between 41 and 50 fewer such incidents over the next four years. In showing that acting to make one method of spreading terror more personally costly – increasing the chances of being arrested and prosecuted for attempting to carry weapons on board – reduced the number of hijackings originating at domestic U.S airports significantly, Landes provided the first

systematic test of the rational-choice model of terrorist behavior. The idea of policy-induced substitution predicts, however, that terrorists would have responded to the installation of metal detectors by reallocating their resources toward other targets.

Enders and Sandler (1993) estimate the interrelations among four types of terrorist incidents occurring over the period running from the first quarter of 1970 through the second quarter of 1988: skyjackings, kidnappings and hostage-takings, attacks against protected personnel (official representatives of heads of state, such as ambassadors and diplomats, along with their accompanying family members) and all other transnational terrorist attacks, including bombings, threats and hoaxes. They also estimate the effects of four U.S. counterterrorism policy interventions introduced over the same period: the installation of metal detectors at domestic airports on 5 January 1973 – an innovation quickly emulated at commercial airfields worldwide – a doubling of spending, beginning in October 1976, to fortify U.S. embassies around the globe, the appropriation in October 1985 of additional resources to secure U.S. embassies and their personnel, and airstrikes against Libyan targets on 15 April 1986, in retaliation for that nation's involvement ten days earlier in the bombing of Berlin's La Belle discotheque, in which American military personnel accounted for many of the 230 people who were injured in the attack and two of the three who were killed.

Enders and Sandler's analysis confirms Landes's finding that the installation of metal detectors reduced the number of aircraft hijacking incidents significantly. Above and beyond that, other results of the study are consistent with the prediction of policy-induced substitution.²⁸ In particular, the advent of airport metal detectors led to significantly more terrorist hostage-taking and, perhaps because the same technology also was deployed at U.S. embassies, military bases and various other government facilities both at home and abroad, to fewer attacks on protected American personnel. On the other hand, Enders and Sandler do not find that additional spending to fortify U.S. embassies around the globe, either in 1976 or 1985, had statistically significant effects on any of the four types of terrorist incidents they examined. One possible explanation here is that in response to the hardening of those targets, terrorists shifted their attacks against embassy personnel to venues outside the walls of diplomatic compounds where countermeasures remained

comparatively weak. They do report, though, that the Libyan airstrikes caused a large, but temporary spike in the number of transnational terrorist bombings, threats and hoaxes. Revenge, obviously, is a powerful motive for terrorists and counter-terrorists alike.

Enders and Sandler (2006, p. 133) conclude from this evidence that "piecemeal policies, designed to thwart only one attack mode, are shown to induce a substitution into other, similar modes, whose unintended consequences may be quite harmful."²⁹ Hence, "an effective counterterrorism policy is one that raises the costs of *all* attack modes or reduces the overall resource level of the terrorists (Ibid., pp. 122–124; emphasis in original).

The substitution possibilities open to terrorists also mean that if one nation enhances the effectiveness of its counterterrorism policies, terrorist groups rationally will shift their bases of operation or the locations of their primary targets to less cautious countries. Such strategic responsiveness undermines unilateral efforts to suppress terrorist activities and, at the same time, makes it more difficult to organize multilateral (i.e., collective) action to counter them (Sandler 2005). If successful in diminishing or eliminating the threat posed by a particular terrorist group, the counterterrorism efforts of one nation confer an external benefit on all countries that otherwise would be vulnerable to its attacks. Because the gains from suppression are shared, but the costs are borne by the taxpayers of a single state, an incentive exists for other nations to free-ride by reducing their own investments in counterterrorism. But they increase their exposures to attack if they do so; alternatively, they can shift terrorists' attention elsewhere by strengthening their own homeland security measures. The interdependencies among national counterterrorist policies help explain why it is that, unless a country frequently is the target of transnational terrorist attacks, its own policies primarily will be defensive rather than proactive: The lion's share of the benefits of the former can be captured locally, whereas those of the latter must be shared more widely (Enders and Sandler 2006, p. 85).³⁰ Just as obviously, however, the defensive measures taken by one nation can impose negative externalities on others by making them more inviting targets.

Another strategy for responding to the threat of terrorism is what Lee (1988) calls the "paid-rider option". In exercising that option, a nation offers sanctuary to a foreign terrorist group in return for assurances that the group will refrain from striking targets in its safe haven. East Germany provided such refuge to the Red Army Faction (Baader-Meinhof Group) and to other perpetrators of left-wing terror during the 1960s and 1970s (Shughart 2006). Lee (1988, p. 24) cites France's harboring of both Arab and Basque terrorists as well as Cypriot and Italian accommodation of Palestinian terrorist groups as additional cases in point.³¹ Failed states, such as Palestine itself, Lebanon, Afghanistan and Pakistan likewise have served as launching pads for transnational terror.

Given that the world's sovereign nations cannot even agree on the identities of terrorist groups – the members of the European Union did not consider Hamas to be a terrorist organization until very recently, for instance (Enders and Sandler 2006, p. 142) – it should not be surprising that the logic of collective action (Olson 1965) supplies terrorists with significant competitive advantages over the governments they threaten. The terrorist group typically has few members or, if not, is organized into compact, independently operating cells. Small numbers facilitate agreement on strategy and tactics and lower the costs of monitoring individual contributions to the collective effort and of controlling incentives to free-ride. Limiting group membership to people bound and, hence, easily identified by common ties of blood, ethnicity, faith or long-term friendship promotes solidarity and limits infiltration by outsiders who may be agents of the opposition or susceptible to becoming informants (Enders and Sandler 2006, p. 88). Because they have interests that are more diffuse and less well-aligned, governments, in contrast, have fewer incentives to mount coordinated responses to terrorist threats.³²

The asymmetric warfare characteristic of terrorist campaigns thus has two distinct aspects. One of these is found in the imbalance between the richness of the terrorist target environment and the inability of defenders to protect all potential victims of terror. The other asymmetry relates to organizing collective action: compared with the nation-states that are threatened by terrorist violence, terrorist groups enjoy a comparative advantage in capturing its benefits as well as in controlling its costs.

4. The logic of suicide terrorism

Rational individuals often place themselves in harm's way. They voluntarily choose to earn livings as firefighters or police officers; they willingly become soldiers or sailors; they endanger their own lives in order to rescue others, including strangers, from peril; and they join terrorist groups. Many of the activities engaged in by rational human beings involve tradeoffs between risk and reward. A decision to drive rather than to fly to grandma's house for Thanksgiving, even though the chooser is much more likely to be injured or killed in an automobile accident than in an airplane crash, can, for example, be fully rational if the (normally) lower out-of-pocket costs car travel more than offset the higher opportunity costs of the driver's time as well as his greater exposure to risk.

So, too, does a weighing of expected benefits and expected costs inform an individual's decision to participate – or not – in a terrorist campaign. But suicide terrorists seem to be wildly irrational – to place themselves beyond explanation by the economist's rational-choice model. It is, after all, one thing to risk capture, serious bodily harm or even death in a planned attack on a target selected by the terrorist group's leader; it is quite another purposely to die by detonating a bomb carried in one's vehicle or on one's person with the object of "influencing an audience" that, it is hoped, will then demand governmental action favorable to the group's cause. While it is true that for technical reasons the bomb may not explode, it is also true that that possibility is remote. The suicide terrorist is almost certain to die.

Suicide terrorism thus poses the gravest challenge to the rational-actor model. One explanation for it is that it works: Suicide attacks have been successful in compelling "American and French forces to abandon Lebanon in 1983, Israeli forces to leave Lebanon in 1985, Israeli forces to quit the Gaza Strip and the West Bank in 1994 and 1995, [and] the Sri Lankan government to create an independent Tamil state from 1990 on..." (Pape 2005, p. 22). In recent memory, suicide terrorism in the late 1990s failed (so far) only in convincing Turkey to grant autonomy to the Kurds (Ibid.). Neither has it caused Israel to accede to Palestinian territorial demands. But success or failure must have been cold comfort to the individual terrorists who died in these suicide campaigns.

As noted earlier, suicide terrorists do not fit any tidy demographic characterization: “they have been college educated and uneducated, married and single, men and women, isolated and socially integrated; they have ranged in age from fifteen to fifty-two” (Ibid., p. 17). Pape (Ibid., p. 23) concludes “that suicide terrorism is mainly a response to foreign occupation” and Wintrobe (2006) sees such behavior as being driven by a form of solidarity with an authoritarian leader so extreme that the leader’s beliefs become the disciple’s own and, hence, produce a willingness to die to advance the leader’s goals. Solidarity, purchased in Wintrobe’s model by trading individual beliefs for group beliefs, is fostered by repeated interaction between the leader and his followers, which helps explain why newcomers rarely are selected for suicide missions and also why the threat of punishment for failing to carry out an attack sometimes is necessary (Enders and Sandler 2006, p. 125).

But economic incentives offer a potentially more fruitful avenue for understanding the rationality of suicide terrorism. The available evidence suggests that terrorist groups offer tangible rewards to suicide attackers’ kin. Under the regime of Saddam Hussein, for example, the family of a suicide bomber was paid \$25,000, whereas the relatives of terror group members killed in more regular battleground encounters received \$10,000 (Ibid., p. 126). Iannaccone and Berman (2006) argue, as does Zakaria (2003), that terrorist groups supply social welfare benefits to members and their families in return for compliance with the group’s demands, including orders leading to certain death.

Such observations supply support for Azam’s (2005) model of suicide terrorism as an intergenerational investment – an extreme form of saving. Suicide terrorists transfer wealth to their parents, their siblings and their children, if any. In addition to the private benefits accruing to family members, suicide attackers also may be motivated by the prospect of bequeathing a public good – increasing the likelihood of the withdrawal of foreign occupation or of the creation of an independent political state – to the next generation. Terrorists’ regard for the welfare of their family members helps explain why it is Israel’s policy to destroy the homes of suicide attackers.

A terrorist act carrying with it certain death may be rational in an evolutionary perspective. Genes can be thought of as self-interested actors that “want” to maximize their chances of survival (Dawkins [1976] 1989).³³ And in that context,

the minimum requirement for a suicidal altruistic gene to be successful is that it should save more than two siblings (or children or parents), or more than four half-siblings (or uncles, aunts, nephews, nieces, grandparents grandchildren) or more than eight first cousins, etc. Such a gene, on average, tends to live on in the bodies of enough individuals saved by the altruist to compensate for the death of the altruist itself. (Ibid., p. 97)

Hence, under the right conditions,³⁴ the selfish gene can be an altruist.

Suicide terrorism is not yet well-understood by economists – or anyone else for that matter. It poses a serious challenge to their rational-choice model (Caplan 2006). But, rather than relying on religious zealotry, group cohesion or other psycho-social factors to explain its origins and growing importance as a terrorist strategy, it is worth keeping the following salient attributes of suicide attacks in mind. They are more lethal than other kinds of terrorist tactics and, because so, are more likely to achieve a terrorist group’s goal of “influencing an audience”. Suicide attacks often have succeeded in forcing concessions from targeted governments, Exhibit A being the withdrawal of a multinational peacekeeping force from Lebanon in early 1984, following Hezbollah’s suicide bombing of the U.S. Marine Corps’s barracks in Beirut, which claimed 240 lives, combined with its abduction of western hostages, its murdering of American and French soldiers, and its attacks on the embassies of both nations (Laqueur 1999, p. 137; Pillar 2001, p. 20). In addition to the private benefits for family members, suicide attacks offer at least two more advantages to the terrorist groups that orchestrate them: they are more difficult to thwart than other terrorist methods and the attackers themselves are less likely to be apprehended, thereby lowering the risk that the identities of other group members or the group’s planned operations will be exposed (Enders and Sandler 2006, p. 126). Dead men (and women) tell no tales.

5. Concluding remarks

No matter how terrorism is defined, it is increasingly clear that many of its facets can be comprehended by modeling terrorists as rational actors, animated by the same kinds of incentives and constraints that influence the behavior of individuals in more ordinary pursuits. Terrorism, it is important to emphasize, does not arise in a vacuum. It emerges from inter-group conflict over things such as the distribution of land or other natural resources and the control of the levers of political power, including appointments to public office and access to the largesse of the welfare state: "Gain (or avoidance of loss) is the common reason for undertaking warfare" (Tullock 1974, p. 87). Terrorism differs from full-blown war in means and in scale, but not in ends.

Applying the rational-choice model to terrorism supplies insights into the emergence of terrorist groups, the targets they select and their modes of attack not amenable to explanation by other social-science methodologies. Its lessons, especially the model's prediction of policy-induced substitution, are of critical importance in formulating public policies intended to counter the terrorist threat. Actions undertaken to suppress one mode of attack may provoke terrorists to shift to other, perhaps more deadly tactics. Indeed, past efforts to clamp down on skyjackings and to protect embassies, other government installations and their personnel from kidnapping and assassination may well be responsible for the rise of suicide bombing, which is the most difficult mode of terrorist operations to defeat.

Most of the evidence adduced thus far in the rational-choice research program suggests that terrorism is more likely to arise in ethnically fragmented nation-states that lack "good institutions", implying that policies promoting transitions from authoritarianism to liberal constitutional democracy will, by providing non-violent options for expressing grievances against the incumbent regime, reduce terrorism's threat. But the holding of (superficially) competitive elections is only the window-dressing of the classical liberal state. Equally and perhaps more important, are the respect for private property rights, freedom of contract and the rule of law that allow ordinary citizens to improve their standards of living without fear of public confiscation of their private gains (Basuchoudhary and Shughart 2009). Moreover, most of the "countries" that have been the launching pads of terror are artificial constructs, whose boundaries were drawn by colonial powers

in the sequels to the two world wars of the twentieth century (Shughart 2002, 2006; Ferguson 2006). Rather than trying to export democracy to the rest of the world, largely unsuccessfully (Coyne 2008), perhaps it is time to promote the economic liberties of the peoples of the globe's authoritarian or "failed" states by engaging in trade with them and encouraging the adoption of constitutional solutions to factional problems, confining central governments to issues of truly overarching national interest, endowing ethnic homelands with substantial regional autonomy, and in the event that differences cannot be reconciled, establishing a mechanism for orderly political secession.

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Notes

1. A caveat: The literature surveyed herein focuses on nonstrategic approaches to terrorism, generally confining the reader's attention to the results of partial equilibrium models. To conserve space, studies of terrorism that adopt game-theoretic perspectives are for the most part ignored.
2. As Yassir Arafat once said, "the difference between the revolutionary and the terrorist lies in the reason for which each fights. For whoever stands by a just cause and fights for the freedom and liberation of his land from the invaders, the settlers and the colonialists, cannot possibly be called a terrorist..." (quoted in Hoffman 1998, p. 26). Similarly, Conor Cruise O'Brien refuses to attach the terrorist label to anyone resisting an authoritarian regime (Crenshaw 1990, p. 13).
3. "*Collateral damage* is not in [terrorism's] lexicon" (National Commission on Terrorist Attacks upon the United States 2004, p. xvi; emphasis in original).
4. Gabel (1990) describes masterfully how such characteristics are fostered during the training exercises of elite military units. McPherson (1997, p. 170) nevertheless concludes that, along with the

avoidance of personal dishonor, devotion to the same “holy cause” – an “ideological commitment to liberty, independence, and self-government” – animated the combatants on both sides of the War Between the States. Also see McPherson (1994). Some scholars of terrorism (e.g., Hoffman and McCormick 2004; Gambetta 2005) have echoed this point of view in arguing that terrorists love their group or their cause – and hate their enemies – more than they love themselves.

5. Pape’s (2003, 2005) widely cited work on suicide terrorism, about which more below, has provoked considerable controversy. See Ashworth et al. (2008), who contend that Pape’s dataset, which includes every identifiable suicide terror attack between 1980 and 2001, “samples on the dependent variable” and, hence, suffers from sample-selection bias. Pape (2008) counters that criticism by arguing that he collected information on the universe of suicide terrorists over the period studied.
6. A pioneering contribution to the literature is Sandler, Tschirhart and Cauley (1983). Enders and Sandler (1995) summarize the rational choice approaches to terrorism, which nowadays has begun infiltrating the literature of political science (see, e.g., Bueno de Mesquita 2005). Leeson’s (2009) recent study of piracy during its “golden age”, circa 1716–1726, supplies an important and insightful application of the rational-choice model to another form of superficially aberrant human behavior.
7. An earlier anarchist wave of terror reached its high point in the 1890s, a period sometimes referred to as the “Golden Age of Assassination” (Rapoport [1992] 2004, p. 1053).
8. The Atlantic Charter gave new life to the “post-colonial” or “anti-colonial” terrorism that emerged in the 1920s out of decisions taken at the Paris Peace Conference leading to the Treaty of Versailles and the conclusion of the First World War (Rapoport 2004, p. 52). Surveying the war’s geopolitical wreckage, President Woodrow Wilson had proclaimed en route to Paris that “we now say that all these people have the right to live their own lives under governments which they themselves choose to set up” (quoted in Macmillan 2002, p. 11). In the event, unwilling to compromise and seriously weakened by illness, Wilson returned home to witness the U.S. Senate’s failure to ratify the Treaty and to see his dream of making the world safe for democracy crippled by fulfillment, under the auspices

of the newly established League of Nations, of the terms of the secret Sykes-Picot Treaty of 1916, which assigned governing mandates to Britain and France in the non-European territories of the defeated Ottoman and Habsburg empires. Local resistance to the mandatory powers surfaced in short order as the subject peoples, resentful of unbidden administration from London or Paris, began demanding the home rule Wilson had promised. Terror campaigns, including assassinations of British and French military and civilian personnel as well as attacks on their governmental installations, engulfed much of the Middle East and Central Asia in the Great War's aftermath. See Fromkin (1989).

9. Detailed portraits of these two exemplary left-wing terrorist groups can be found in Weinberg and Eubank (1987) and Aust (2008).
10. See Rowley and Smith (2009) for an analysis of the contributions of fundamentalist Islamic beliefs to the terrorism of the late twentieth and early twenty-first centuries.

11. According to Al-Khatib Al-Tibrizi's *The Niches of Lamps*,

The Messenger of God said: "A martyr has six privileges with God. He is forgiven his sins on the shedding of the first drop of his blood; he is shown his place in paradise; he is redeemed from the torments of the grave; he is made secure from the fear of hell and a crown of glory is placed on his head of which one ruby is worth more than the world and all that is in it; he will marry seventy-two of the huris with black eyes; and his intercession will be accepted for seventy of his kinsmen. (Quoted in Rapoport 1990, pp. 117–118)

12. Anecdotally, Collier and Hoeffler (2004) point out that, during the Russian civil war following the revolution orchestrated by V. I. Lenin, the desertion rates in the two contending armies (the Reds and the Whites) were about ten times higher during summertime than wintertime because the income

foregone by the peasant rebels was much larger when fields needed to be plowed and harvests gathered.

13. Frey and Luechinger (2003, p. 247) offer "three specific [counterterrorism] strategies: visits to other countries, principal witness programmes, and formal contact, discussion processes and access to normal political participation." The underlying analysis is elaborated in Frey (2004). Anderton and Carter (2005) present a more rigorous analysis of the tradeoffs that emphasizes the importance of cross-price elasticities, expenditure shares and income elasticities in evaluating the effectiveness of "benevolence" versus deterrence as counterterrorism strategies.
14. Consistent with public choice reasoning, Coats, Karahan and Tollison (2006) report evidence suggesting that, in the wake of the shocking events of 9/11, grants to the U.S. states by the newly created Department of Homeland Security were influenced to a greater extent by presidential electoral politics than by independent measures of states' vulnerability to terrorism.
15. Paraphrasing a letter published by the Irish Republican Army after learning that its bombing of Brighton's Grand Hotel had failed to kill Prime Minister Margaret Thatcher, Enders and Sandler (2006, p. 143) write that, "governments have to be fortunate on a daily basis, while terrorists only have to be lucky occasionally."
16. Transnational terrorism refers to incidents that originate in one country and target another; "its ramifications transcend national boundaries" (Mickolus, Sandler and Murdock 2003, p. 2). Attacks by Algerian terrorists on Metropolitan France supply one graphic example (Horne [1977] 2006). September 11, 2001, also exemplifies, as do the Madrid train bombings on 11 March 2004, and the July 2005 terrorist attack on London's Underground. The release of sarin nerve gas into a Tokyo subway by Aum Shinrikyo in March 2005, killing 12 and injuring thousands more, and Timothy McVeigh's bombing of the Alfred P. Murrah Federal Building in Oklahoma City on 13 April 1995, causing 168 fatalities, are examples of domestic terrorism, which, by definition, starts and ends in the

- same nation. In terms of raw numbers, domestic terrorism outpaces transnational terrorism worldwide by a factor of nine (Enders and Sandler 2006, p. 22).
17. During the 1990s, 70 per cent of the terrorism-related injuries and 19 per cent of the fatalities were caused by less than 0.01 per cent of the terrorist attacks (Johnson 2001, p. 905).
 18. Li (2005) also finds that, owing to the opportunities they afford for minority parties to secure seats in the national legislature, parliamentary (proportional representation) systems of government experience significantly less terrorism than alternative, mainly presidential democracies. Regime stability likewise reduces a nation's vulnerability to terrorist attacks at home.
 19. Wilkinson (1986, p. 39) argues that there is little moral justification for violence as a means of expressing political demands in a liberal democracy, where the civil rights of minorities are protected and the personal safety of members of minority groups is not in question. But based on evidence from Italy – hardly a stable democracy – Weinberg and Eubank (1987) report evidence suggesting that “rebel terror” occurs most frequently in democratic nation-states, independent of whether the state actually is democratic, is transitioning toward democracy, or has suddenly arrested a pro-democracy movement.
 20. Israel, for somewhat different reasons, also belongs on the list. Notable net exporters of terrorism are Ireland, Iran and Cuba (Blomberg and Hess 2008b, p. 128).
 21. According to Enders and Sandler, 40 percent of the transnational terrorist attacks between 1969 and 2005 targeted U.S. interests.
 22. Grossman (1991) supplies the underlying theoretical model. Also see Blomberg, Hess and Weerapanna (2004b). Llussá and Tavares (2008) provide a detailed review of the relevant empirical literature.
 23. But see Sambanis (2008, p. 175), who contends that, “while civil wars can easily generate conditions that favor terrorism”, the two are quite distinct and, hence, the conditions that produce the first will not necessarily foster the second.

24. "Fractionalization" typically is measured on the basis of a Herfindahl-Hirschman index, constructed as the sum of squares of the population percentages of a country's ethnic, linguistic or religious groups. A nation is more heterogeneous on such a calculation the larger is the number of different groups it contains and, hence, the less likely it is that any two people belong to the same group. The alternative concept of "ethnic polarization" stands on a theoretically stronger footing (Esteban and Ray 1994; Montalvo and Reynal-Querol 2005). An ethnic polarization index is constructed by summing the (absolute values) of the distances with respect to a set of distinguishing attributes between groups of relatively uniform size, internally homogeneous with respect to the attributes, but differing significantly on the same attributes from other groups. The index takes a maximum at 0.5. Ethnic polarization thus is greatest when a society is divided into two groups of equal size. So, too, is ethnic conflict (Esteban and Ray 1999), a result consistent with Horowitz's ([1985] 2000) claim that disputes are more likely when an ethnic majority faces a *large* ethnic minority. Thus one expects, and finds, that ethnic polarization is a much better predictor of conflict than ethnic fractionalization (Montalvo and Reynal-Querol 2005).
25. The growth-reducing impacts of ethnic fractionalization (Easterly and Levine 1997; Easterly 2000) and of ethnic polarization (Keefer and Knack 2002) are fairly well-established. Cashdan (2001) is an exception.
26. Bombings account "for about half of all terrorist incidents" (Sandler and Enders 2004) largely because they are cheap: the bomb exploded underneath the World Trade Center in 1993 "cost only \$400 but caused over \$500 million in damages" (Enders and Sandler 2006, p. 149).
27. The "game" may not have lasted very long during the 1960s and 1970s. Rapoport ([1992] 2004, p. 1064) reports that 90 percent of "Third Wave" (i.e., "New Left") terrorist groups did not survive more than one year and that half of the surviving groups had been disbanded within a decade of their birth.

28. Enders, Sandler and Cauley (1990a) likewise report evidence that the introduction of metal detectors at airports prompted terrorists to engage in more kidnapping and barricade-and-hostage-taking missions. Also see Enders and Sandler (2004).
29. An additional “unintended” consequence of metal detectors is that the types of attack modes into which terrorists subsequently shifted were on the average more deadly than those employed beforehand (Enders and Sandler 2000), a tendency reinforced by the rise of Islamist terrorism (Enders and Sandler 2005).
30. In contrast, nation-states pursue domestic terrorist groups aggressively when their attacks primarily target interests at home (Enders and Sandler 2006, p. 85).
31. John le Carré (2008, pp. 56–57) supplies a fictional account of the paid-rider option circa 9/11:
- Okay, [Hamburg] harbored a few Islamist terrorists, and a trio of them had gone off and blown up the Twin Towers and the Pentagon. So what? It was what they'd come here to do, and they'd done it. Problem solved. They'd struck at the heart of the Great Satan, and they'd killed themselves in the process. *We* were their *launchpad* for Christ's sake, not their target! Why should *we* worry? So we lit candles for the poor Americans. And we *prayed* for the poor Americans. And we showed them a lot of *free solidarity*. . . . And when the Iraq War came along, and we good Germans stayed aloof from it, that made us even *more* immune. Madrid happened. Okay. London happened. Okay. But no Berlin, no Munich, no Hamburg. We were too . . . immune for *any* of it. (emphasis in original)

The phrase “a few Islamist” was deleted from the first line of this passage in the audio-book version of *A Most Wanted Man*; one word has been omitted from the final sentence here in order to avoid offending sensitive readers.

32. The divergent interests of individual governments explain why Enders, Sandler and Cauley (1990b) were unable to find any significant differences in transnational terrorist activity following the adoption of numerous regional and international agreements designed to counter various terrorist threats.
33. But see Demsetz (2008), who attempts to restore individuals as the principal actors by allowing genes to appoint the person within whose body they reside as a central planner or agent, imperfect though the agent may be, for taking decisions on their behalf. However, Demsetz does not inquire into the mechanism (voting rule) by which genes collectively chose the actions they want their agent to take.
34. The right conditions follow from "Hamilton's Rule . . . , [which] states that, other things equal, evolutionary selection will lead a Donor organism D to aid a recipient organism R if the *cost-benefit ratio* c_D/b_R is less than their *relatedness* r_{DR} . . .", where "cost c_D and benefit b_R are measured in increments to the 'fitness' (i.e., reproductive survival) of Donor and Recipient, respectively" (Hirshleifer 2001, p. 21; emphasis in original). In the original version of this contribution to the literature (Hirshleifer 1998), the comma following "i.e." improperly is missing.

References

- Abadie, A. and J. Gardeazabal (2003), 'The economic cost of conflict: A case study of the Basque country', *American Economic Review*, **93**, 113–132.
- Anderton, C. H. and J. R. Carter (2005), 'On rational choice theory and the study of terrorism', *Defence and Peace Economics*, **16** (4), 275–282.
- Ashworth, S., J. D. Clinton, A. Meirowitz and K. W. Ramsay (2008), 'Design, inference, and the strategic logic of suicide terrorism', *American Political Science Review*, **102** (2), 269–273.
- Aust, S. ([1987] 2008), *Baader-Meinhof: The Inside Story of the R.A.F.*, trans by A. Bell, Oxford: Oxford University Press.
- Azam, J. P. (2005), 'Suicide bombing as intergenerational investment', *Public Choice*, **122**, 177–198.

- Basuchoudhary, A. and W. F. Shughart II (2009), 'On ethnic conflict and the origins of transnational terrorism', *Defence and Peace Economics*, forthcoming.
- Berman, E. B. and D. Laitin (2006), 'Hard targets: Evidence on the tactical use of suicide attacks', <http://dss.ucsd.edu/~elib/RatMartyrs.pdf>; accessed 16 June 2009.
- Blomberg, S. B. and G. D. Hess (2002), 'The temporal links between conflict and economic activity', *Journal of Conflict Resolution*, **46** (1), 74–90.
- Blomberg, S. B. and G. D. Hess (2008a), 'From (no) butter to guns? Understanding the economic role in transnational terrorism', in P. Keefer and N. Loayza (eds), *Terrorism, Economic Development, and Political Openness*, Cambridge: Cambridge University Press, pp. 83–115.
- Blomberg, S. B. and G. D. Hess (2008b), 'The Lexus and the olive branch: Globalization, democratization, and terrorism', in P. Keefer and N. Loayza (eds), *Terrorism, Economic Development, and Political Openness*, Cambridge: Cambridge University Press, pp. 116–147.
- Blomberg, S. B., G. D. Hess and A. Orphanides (2004), 'The macroeconomic consequences of terrorism', *Journal of Monetary Economics*, **51**, 1007–1032.
- Blomberg, S. B., G. D. Hess and S. Thacker (2006), 'On the conflict-poverty nexus', *Economics and Politics*, **18** (3), 237–267.
- Blomberg, S. B., G. D. Hess and A. Weerapana (2004a), 'Economic conditions and terrorism', *European Journal of Political Economy*, **20**, 463–478.
- Blomberg, S. B., G. D. Hess and A. Weerapana (2004b), 'An economic model of terrorism', *Conflict Management and Peace Science*, **21**, 17–28.
- Bueno de Mesquita, E. (2005), 'Conciliation, commitment and counterterrorism: A formal model', *International Organization*, **59** (1), 145–176.
- Caplan, B. (2006), 'Terrorism: The relevance of the rational choice model', *Public Choice*, **128** (1–2), 91–107.
- le Carré, J. (pseud.) (2008), *A Most Wanted Man*, New York: Scribner.

- Cashdan, E. (2001), 'Ethnocentrism and xenophobia: A cross-cultural study', *Current Anthropology*, **42** (5), 760–766.
- Clausewitz, C. von ([1832] 1976), *On War*, ed. and trans. by M. Howard and P. Paret, Princeton: Princeton University Press.
- Coats, R. M., G. Karahan and R. D. Tollison (2006), 'Terrorism and pork-barrel spending', *Public Choice*, **128** (1–2), 275–287.
- Coll, S. (2004), *Ghost Wars: The Secret History of the CIA, Afghanistan, and bin Laden, from the Soviet Invasion to September 11, 2001*, New York: Penguin.
- Collier, P. and A. Hoeffler (2004), 'Greed and grievance in civil war', *Oxford Economic Papers*, **56**, 563–595.
- Cooper, H. H. A. (2001), 'Terrorism: The problem of definition revisited', *American Behavioral Scientist*, **44** (6), 881–893.
- Coyne, C. J. (2008), *After War: The Political Economy of Exporting Democracy*, Stanford, CA: Stanford University Press.
- Crain, N. V. and W. M. Crain (2006), 'Terrorized economies', *Public Choice*, **128** (1–2), 317–349.
- Crenshaw, M. (1990), 'The logic of terrorism: Terrorist behavior as a product of strategic choice', in W. Reich (ed.), *Origins of Terrorism: Psychologies, Ideologies, Theologies, States of Mind*, Washington, DC: Woodrow Wilson Center and Baltimore and London: Johns Hopkins University Press, pp. 7–24.
- Dawkins, R. ([1976] 1989), *The Selfish Gene*, Oxford and New York: Oxford University Press.
- Demsetz, H. (2008), *From Economic Man to Economic System*, Cambridge and New York: Cambridge University Press.
- Dostoevsky, F. ([1872] 1994), *Demons: A Novel in Three Parts*, trans. by R. Pevear and L. Volokhonsky, New York: Knopf.
- Downs, A. (1957), *An Economic Theory of Democracy*, New York: Harper & Row.
- Drakos, K. (2004), 'Terrorism-induced structural shifts in financial risk: Airline stocks in the aftermath of the September 11th terrorist attacks', *European Journal of Political Economy*, **20**, 435–446.

- Drakos, K. and A. M. Kutan (2003), 'Regional effects of terrorism on tourism in three Mediterranean countries', *Journal of Conflict Resolution*, **47**, 621–641.
- Easterly, W. (2000), 'Can institutions resolve conflict?', *Economic Development and Cultural Change*, **49** (4), 687–706.
- Easterly, W. and R. Levine (1997), 'Africa's growth tragedy: Policies and ethnic divisions', *Quarterly Journal of Economics*, **112** (4), 1203–1250.
- Eckstein, Z. and D. Tsiddon (2004), 'Macroeconomic consequences of terror: Theory and the case of Israel', *Journal of Monetary Economics*, **51**, 971–1002.
- Enders, W. and T. Sandler (1991), 'Causality between transnational terrorism and tourism: The case of Spain', *Terrorism*, **14**, 49–58.
- Enders, W. and T. Sandler (1993), 'The effectiveness of antiterrorism policies: A vector-autoregression approach', *American Political Science Review*, **87** (4), 829–844.
- Enders, W. and T. Sandler (1995), 'Terrorism: Theory and applications', in K. Hartley and T. Sandler (eds), *Handbook of Defence Economics*, vol. I, Amsterdam: North-Holland, pp. 213–249.
- Enders, W. and T. Sandler (1996), 'Terrorism and foreign direct investment in Spain and Greece', *Kyklos*, **49**, 331–352.
- Enders, W. and T. Sandler (2000), 'Is transnational terrorism becoming more threatening? A time-series investigation', *Journal of Conflict Resolution*, **44** (3), 307–332.
- Enders, W. and T. Sandler (2004), 'What do we know about the substitution effect in transnational terrorism?', in A. Silke and G. Ilardi (eds), *Researching Terrorism: Trends, Achievements, Failures*, Ilford: Frank Cass, pp. 119–137.
- Enders, W. and T. Sandler (2005), 'After 9/11: Is it all different now?', *Journal of Conflict Resolution*, **49** (2), 259–277.
- Enders, W. and T. Sandler (2006), *The Political Economy of Terrorism*, Cambridge: Cambridge University Press.

- Enders, W., T. Sandler and J. Cauley (1990a), 'Assessing the impact of terrorist-thwarting policies: An intervention time series approach', *Defence Economics*, **2** (1), 1–8.
- Enders, W., T. Sandler and J. Cauley (1990b). 'UN conventions, technology, and retaliation in the fight against terrorism: An econometric evaluation', *Terrorism and Political Violence*, **2** (1), 83–105.
- Enders, W., T. Sandler and G. F. Parise (1992), 'An econometric analysis of the impact of terrorism on tourism', *Kyklos*, **45**, 531–554.
- Esteban, J.-M. and D. Ray (1994), 'On the measurement of polarization', *Econometrica*, **62**, 819–851.
- Esteban, J.-M. and D. Ray (1999), 'Conflict and distribution', *Journal of Economic Theory*, **87** (2), 379–415.
- Eubank, W. L. and L. B. Weinberg (1994), 'Does democracy encourage terrorism?', *Terrorism and Political Violence*, **6** (4), 417–435.
- Eubank, W. L. and L. B. Weinberg (2001), 'Terrorism and democracy: Perpetrators and victims', *Terrorism and Political Violence*, **13** (1), 155–164.
- Faria, J. R. and D. G. Arce M. (2005), 'Terror support and recruitment', *Defence and Peace Economics*, **16** (4), 263–273.
- Ferguson, N. (2006), *The War of the World: Twentieth-Century Conflict and the Descent of the West*, New York: Penguin.
- Fielding, D. (2003), 'Counting the cost of the Intifada: Consumption, saving and political instability in Israel', *Public Choice*, **116**, 297–312.
- Fleischer, A. and S. Buccola (2002), 'War, terror, and the tourism market in Israel', *Applied Economics*, **34**, 1335–1343.
- Frey, B. S. (2004), *Dealing with Terrorism – Stick or Carrot?* Cheltenham, UK and Northampton, MA, USA: Edward Elgar.
- Frey, B. S. and S. Luechinger (2003), 'How to fight terrorism: Alternatives to deterrence', *Defence and Peace Economics*, **14** (4), 237–249.

- Frey, B. S., S. Luechinger and A. Stutzer (2009), 'The life satisfaction approach to valuing public goods: The case of terrorism', *Public Choice*, **138**, 317–345.
- Fromkin, D. (1989), *A Peace to End all Peace: The Fall of the Ottoman Empire and the Creation of the Modern Middle East*, New York: Henry Holt.
- Gabel, K. (1990), *The Making of a Paratrooper: Airborne Training and Combat in World War II*, ed. with and introduction and epilogue by W. C. Mitchell, Lawrence: University Press of Kansas.
- Gambetta, D. (ed.) (2005), *Making Sense of Suicide Missions*, Oxford and New York: Oxford University Press.
- Green, D.P., J. Glaser and A. Rich (1998), 'From lynching to gay bashing: The elusive connection between economic conditions and hate crimes', *Journal of Personality and Social Psychology*, **75** (1), 82–92.
- Grossman, H. I. (1991), 'A general equilibrium model of insurrection', *American Economic Review*, **81** (4), 912–921.
- Hardin, R. (1995), *One for All: The Logic of Group Conflict*, Princeton: Princeton University Press.
- Heinlein, R. A. ([1966] 1994), *The Moon is a Harsh Mistress*, New York: Tom Doherty.
- Hirshleifer, J. (1983), 'From the weakest-link to best shot: The voluntary provision of public goods', *Public Choice*, **41** (3), 371–386.
- Hirshleifer, J. (1991), 'The paradox of power', *Economics and Politics*, **3** (3), 177–200.
- Hirshleifer, J. (1998), 'The bioeconomic causes of war', *Managerial and Decision Economics*, **19**(7–8), 457–466.
- Hirshleifer, J. (2001), *The Dark Side of the Force: Economic Foundations of Conflict Theory*, Cambridge and New York: Cambridge University Press.
- Hoffman, B. (1998), *Inside Terrorism*, New York: Columbia University Press.
- Hoffman, B. and G. McCormick (2004), 'Terrorism, signaling, and suicide attack', *Studies in Conflict and Terrorism*, **27**, 243–281.
- Horne, A. ([1977] 2006), *A Savage War of Peace: Algeria, 1954–1962*, New York: New York Review Books.
- Horowitz, D. L. ([1985] 2000), *Ethnic Groups in Conflict*, Berkeley: University of California Press.

- Iannaccone, L. B. and E. B. Berman (2006), 'Religious extremism: The good, the bad, and the deadly', *Public Choice*, **128** (1–2), 109–129.
- Ito, H. and D. Lee (2004), 'Assessing the impact of the September 11 terrorist attacks on U.S. airline demand', *Journal of Economics and Business*, **57**, 75–95.
- Johnson, L. C. (2001), 'The future of terrorism', *American Behavioral Scientist*, **44** (6), 894–913.
- Kahneman, D. and A. Tversky (1979), 'Prospect theory: An analysis of decision under risk', *Econometrica*, **47**, 263–291.
- Keefer, P. and S. Knack (2002), 'Polarization, politics and property rights: Links between inequality and growth', *Public Choice*, **111**, 127–154.
- Keefer, P. and N. Loayza (eds) (2008), *Terrorism, Economic Development, and Political Openness*, Cambridge: Cambridge University Press.
- Kellen, K. (1990), 'Ideology and rebellion: Terrorism in West Germany', in W. Reich (ed.), *Origins of Terrorism: Psychologies, Ideologies, Theologies, States of Mind*, Washington, DC: Woodrow Wilson Center and Baltimore and London: Johns Hopkins University Press, pp. 43–58.
- Krueger, A. B. and D. D. Laitin (2008), 'Kto kogo? A cross-country study of the origins and targets of terrorism', in P. Keefer and N. Loayza (eds), *Terrorism, Economic Development, and Political Openness*, Cambridge: Cambridge University Press, pp. 148–173.
- Krueger, A.B. and J. Malecková (2003), 'Education, poverty and terrorism: Is there a causal connection?', *Journal of Economic Perspectives*, **17** (4), 119–144.
- Kurrild-Klitgaard, P., M. K. Justesen and R. Klemmensen (2006), 'The political economy of freedom, democracy and terrorism', *Public Choice*, **128** (1–2), 289–315.
- Landes, W. M. (1978), 'An economic study of U.S. aircraft hijackings, 1961–1976', *Journal of Law and Economics*, **21** (1), 1–31.
- Laqueur, W. (1999), *The New Terrorism: Fanaticism and the Arms of Mass Destruction*, Oxford and New York: Oxford University Press.

- Lee, D. R. (1988), 'Free riding and paid riding in the fight against terrorism', *American Economic Review Papers and Proceedings*, **78** (2), 22–26.
- Leeson, P. T. (2009), *The Invisible Hook: The Hidden Economics of Pirates*, Princeton and Oxford: Princeton University Press.
- Levitt, S. D. and S. J. Dubner (2005), *Freakonomics: A Rogue Economist Explores the Hidden Side of Everything*, New York: William Morris/HarperCollins.
- Li, Q. (2005), 'Does democracy promote transnational terrorist incidents?', *Journal of Conflict Resolution*, **49**, 278–297.
- Llussá, F. and J. Tavares (2008), 'Economics and terrorism: What we know, what we should know, and the data we need', in P. Keefer and N. Loayza (eds), *Terrorism, Economic Development, and Political Openness*, Cambridge: Cambridge University Press, pp. 253–296.
- Macmillan, M. (2002), *Paris 1919: Six Months that Changed the World*. New York: Da Capo Press.
- McPherson, J. M. (1994), *What They Fought For, 1861–1865*. New York: Anchor Books.
- McPherson, J. M. (1997), *For Cause and Comrades: Why Men Fought in the Civil War*, New York and Oxford: Oxford University Press.
- Mickolus, E. F., T. Sandler and J. M. Murdock (2003), *International Terrorism: Attributes of Terrorist Events, 1968–2003*, Dunn Loring, VA: Vinyard Software.
- Montalvo, J. G. and M. Reynal-Querol (2005), 'Ethnic polarization, potential conflict, and civil wars', *American Economic Review*, **95** (3), 796–816.
- National Commission on Terrorist Attacks upon the United States (2004), *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks upon the United States*, New York and London: W. W. Norton.
- Nitsch, V. and D. Schumacher (2004), 'Terrorism and international trade: An empirical investigation', *European Journal of Political Economy*, **20**, 423–433.

- Office of the Coordinator of Counterterrorism (1997), *Patterns of Global Terrorism, 1986*, US Department of State Publication 10433, Washington, DC: US Department of State.
- Olson, M. (1965), *The Logic of Collective Action: Public Goods and the Theory of Groups*, Cambridge: Harvard University Press.
- Pape, R. A. (2003), 'The strategic logic of suicide terrorism', *American Political Science Review*, **97**, 343–361.
- Pape, R. A. (2005), *Dying to Win: The Strategic Logic of Suicide Terrorism*, New York: Random House.
- Pape, R. A. (2008), 'Methods and findings in the study of suicide terrorism', *American Political Science Review*, **102** (2), 275–277.
- Pillar, P. R. (2001), *Terrorism and U.S. Foreign Policy*, Washington, DC: Brookings Institution.
- Rapoport, D. C. (1990), 'Sacred terror: A contemporary example from Islam', in W. Reich (ed.), *Origins of Terrorism: Psychologies, Ideologies, Theologies, States of Mind*, Washington, DC: Woodrow Wilson Center and Baltimore and London: Johns Hopkins University Press, pp. 103–130.
- Rapoport, D. C. ([1992] 2004), 'Terrorism', in M. Hawkesworth and M. Kogan (eds), *Encyclopedia of Government and Politics*, vol. 2, 2nd ed., London and New York: Routledge, pp. 1049–1077.
- Rapoport, D. C. (2004), 'The four waves of modern terrorism', in A. K. Cronin and J. M. Ludes (eds), *Attacking Terrorism: Elements of a Grand Strategy*, Washington, DC: Georgetown University Press, pp. 46–83.
- Rathbone, A. and C. K. Rowley (2004), 'Terrorism', in C. K. Rowley and F. Schneider (eds), *The Encyclopedia of Public Choice*, vol. II, Dordrecht, Boston and London: Kluwer Academic Publishers, pp. 558–563.
- Reich, W. (ed.) (1990), *Origins of Terrorism: Psychologies, Ideologies, Theologies, States of Mind*, Washington, DC: Woodrow Wilson Center and Baltimore and London: Johns Hopkins University Press.
- Rowley, C. K. and N. Smith (2009), 'Islam's democracy paradox: Muslims claim to like democracy, so why do they have so little?', *Public Choice*, **139** (3–4), 273–299.
- Sambanis, H. (2008), 'Terrorism and civil war', in P. Keefer and N. Loayza (eds), *Terrorism, Economic Development, and Political Openness*, Cambridge: Cambridge University Press, pp. 174–206.

- Sandler, T. (2005), 'Collective versus unilateral responses to terrorism', *Public Choice*, **124** (1–2), 75–93.
- Sandler, T. and W. Enders (2004), 'An economic perspective on transnational terrorism', *European Journal of Political Economy*, **20** (2), 301–316.
- Sandler, T. and W. Enders (2008), 'Economic Consequences of Terrorism in Developed and Developing Countries', in P. Keefer and N. Loayza (eds), *Terrorism, Economic Development, and Political Openness*, Cambridge: Cambridge University Press, pp. 17–47.
- Sandler, T., J. T. Tschirhart and J. Cauley (1983), 'A theoretical analysis of transnational terrorism', *American Political Science Review*, **77** (1), 37–54.
- Shughart, W. F. II (2002), 'September 11, 2001', *Public Choice*, **111** (1–2), 1–8.
- Shughart, W. F. II (2006), 'An analytical history of terrorism, 1945–2000', *Public Choice*, **128** (1–2), 7–39.
- Tavares, J. (2004), 'The open society assesses its enemies: Shocks, disasters and terrorist attacks', *Journal of Monetary Economics*, **51**, 1039–1070.
- Tullock, G. (1974), *The Social Dilemma: The Economics of War and Revolution*, Blacksburg, VA: University Publications.
- Turk, A. T. (2004), 'Sociology of terrorism', *Annual Review of Sociology*, **30**, 271–286.
- Vidal, G. ([1964] 1986), *Julian*, New York: Ballentine Books.
- Weinberg, L. B. and W. Eubank (1987), *The Rise and Fall of Italian Terrorism*, Boulder, CO: Westview Press.
- Wilkinson, P. (1986), *Terrorism and the Liberal State*, 2nd ed. New York: New York University Press.
- Wintrobe, R. (2006), 'Extremism, suicide terror, and authoritarianism', *Public Choice*, **128** (1–2), 169–195.
- Zakaria, F. (2003), *The Future of Freedom: Illiberal Democracies at Home and Abroad*, New York and London: W. W. Norton.