
TERRORISM TRENDS AND PROSPECTS

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INTRODUCTION

The bombings of the American embassies in Kenya and Tanzania in August 1998 demonstrate that terrorism is—and will remain—a central threat to international security as we approach the 21st century. Earlier events such as the June 1996 massive explosion outside a U.S. Air Force housing complex in Dhahran, Saudi Arabia, that killed 19 persons and wounded nearly 500 others, and the bombing the previous November of a joint Saudi-American military training center in Riyadh that killed four persons and wounded nearly 40, had already heightened concerns about terrorist targeting of U.S. military as well as diplomatic personnel and assets abroad.

This chapter examines facets of terrorism and likely prospects. We focus first on trends in international terrorism and, in particular, on the reasons behind terrorism's increasing lethality. We then consider the implications of these trends, with special reference to force protection and base security issues. Finally, we offer some concluding thoughts and an assessment of terrorism trends and patterns of activity.

TRENDS IN TERRORISM

Although the total volume of terrorist incidents worldwide has declined in the 1990s, the percentage of terrorist incidents resulting in fatalities has nonetheless grown. This section examines the

reasons behind this trend and its implications for patterns of terrorist activity.

Terrorism's Changing Characteristics

In the past, terrorism was practiced by a collection of individuals belonging to an identifiable organization that had a clear command and control apparatus and a defined set of political, social, or economic objectives. Radical leftist (i.e., Marxist-Leninist/Maoist/Stalinist movements) organizations such as the Japanese Red Army, the Red Army Faction in Germany, and the Red Brigades in Italy, as well as ethno-nationalist terrorist movements such as the Abu Nidal Organization, the Irish Republican Army (IRA), and the Basque separatist group, ETA, reflected this stereotype of the traditional terrorist group. They generally issued communiqués taking credit for—and explaining in great detail—their actions. However disagreeable or distasteful their aims and motivations may have been, their ideology and intentions were at least comprehensible—albeit politically radical and personally fanatical.

Significantly, however, these more familiar terrorist groups engaged in highly selective and mostly discriminate acts of violence. They targeted for bombing various symbolic targets representing the source of their animus (i.e., embassies, banks, national airline carriers, etc.) or kidnapped and assassinated specific persons whom they blamed for economic exploitation or political repression in order to attract attention to themselves and their causes. Even when these groups operated at the express behest of, or were directly controlled by, a foreign government, the connection was always palpable, if not necessarily proven beyond the shadow of legal doubt. For example, following the 1986 retaliatory U.S. air strike on Libya, Colonel Qaddafi commissioned the Japanese Red Army to carry out revenge attacks against American targets. In hopes of obscuring this connection, the Japanese group claimed its Libyan-sponsored operations in the name of a fictitious organization, that of the “Anti-Imperialist International Brigades.”¹ Similarly, Iranian-backed terrorist opera-

¹See Bruce Hoffman, *Inside Terrorism*, Columbia University Press, New York, 1998, pp. 188–189.

tions carried out by Hizbullah in Lebanon during the 1980s were perpetrated under the guise of the so-called "Islamic Jihad."²

Today, the more traditional and familiar types of ethnic/nationalist and separatist as well as ideological group have been joined by a variety of organizations with less-comprehensible nationalist or ideological motivations. These new terrorist organizations embrace far more amorphous religious and millenarian³ aims and wrap themselves in less-cohesive organizational entities, with a more-diffuse structure and membership.⁴ The bombings in Kenya and Tanzania evidence this pattern. Unlike the specific, intelligible demands of past familiar, predominantly secular, terrorist groups who generally claimed credit for and explained their violent acts,⁵ no credible claim for the embassy attacks has yet been issued. Indeed, the only specific information that has come to light has been a vague message taking responsibility for the bombings in defense of the Muslim holy places in Mecca and Medina and promising to "pursue U.S. forces and strike at U.S. interests everywhere."⁶

Further, the embassy attacks themselves do not appear to have been undertaken by a specific existing or identifiable terrorist organization but instead are believed to have been financed by a millionaire Saudi Arabian dissident, Osama bin Laden, as part of his worldwide cam-

²See Magnus Ranstorp, *Hizb'allah in Lebanon: The Politics of the Western Hostage Crisis*, Macmillan, Houndmills, Basingstoke, and London, 1977, pp. 62–63, and U.S. Department of Defense, *Terrorist Group Profiles*, U.S. Government Printing Office, Washington, DC, 1988, p. 15.

³An example is the Aum Shinrikyo, the Japanese group responsible for the 1995 sarin nerve-gas attack on the Tokyo subway system.

⁴See, for example, the analysis in Neil King, Jr., "Moving Target: Fighting Terrorism Is Far More Perilous Than It Used to Be," *Wall Street Journal Europe*, August 25, 1998. See also the discussion below on the emergence of amateur terrorists as evidenced in the 1993 bombing of New York City's World Trade Center.

⁵Indeed, some groups—such as the Provisional Irish Republican Army—not only claimed responsibility for attacks but issued warnings in advance. The communiqués of various European left-wing terrorist groups have often been sufficiently voluminous to warrant their publication in collected volumes. See, for example, Yonah Alexander and Dennis Pluchinsky, *Europe's Red Terrorists: The Fighting Communist Organizations*, Frank Cass, London, 1992, *passim*; and Red Army Faction, *Texte der RAF (RAF Texts)*, Verlag Bo Cavefors, Malmo, Sweden, 1977, *passim*.

⁶Quoted in Tim Weiner, "Bombings in East Africa: The Investigation; Reward Is Offered and Clues Studied in African Blasts," *New York Times*, August 11, 1998.

paing against the United States. In February 1998, for example, bin Laden supplemented his publicly declared war on the United States (because of its support for Israel and the presence of American military forces in Saudi Arabia) with a *fatwa*, or Islamic religious edict. With the issuance of this edict, bin Laden thereby endowed his calls for violence with an incontrovertible theological as well as political justification. To this end, he is believed to be able to call on the services of an estimated 4000–5000 well-trained fighters scattered throughout the Muslim world.⁷ By comparison, many of the traditional, secular terrorist groups of the past were generally much smaller. According to the U.S. Department of Defense, for example, neither the Japanese Red Army nor the Red Army Faction ever numbered more than 20 to 30 hard-core members. The Red Brigades were hardly larger, with a total of fewer than 50 to 75 dedicated terrorists. Even the IRA and ETA could only call on the violent services of perhaps some 200–400 activists whereas the feared Abu Nidal Organization was limited to some 500 men-at-arms at any given time.⁸

The appearance of these different types of adversaries—in some instances with new motivations and different capabilities—accounts largely for terrorism’s increased lethality in recent years. There are a number of implications for terrorism that perhaps portends for increased violence and bloodshed.

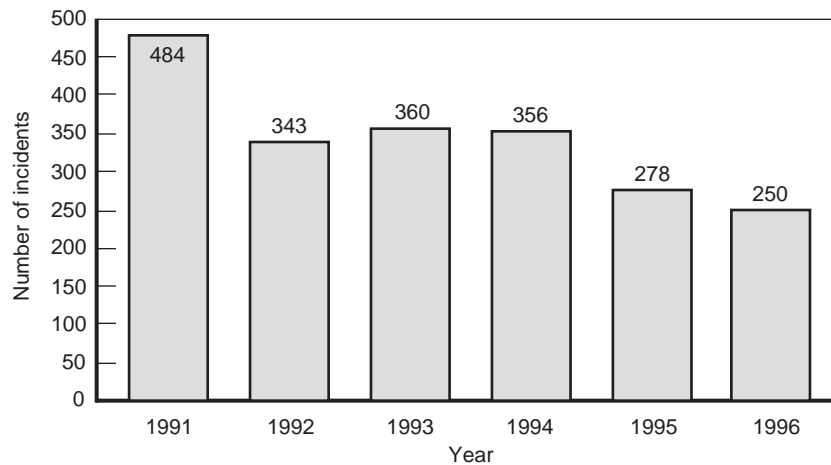
Terrorism’s Increasing Lethality

Although the total volume of terrorist incidents worldwide has declined in the 1990s (see Figure 1), the percentage of terrorist incidents with fatalities has increased. According to the RAND-St. Andrews Chronology of International Terrorism,⁹ a record 484

⁷Marie Colvin, Stephen Grey, Matthew Campbell, and Tony Allen-Mills, “Clinton gambles all on revenge,” *Sunday Times*, London, August 23, 1998.

⁸U.S. Department of Defense, *Terrorist Group Profiles*, 1998, pp. 5, 35, 61, 64, 56, and 118.

⁹The RAND-St. Andrews Chronology of International Terrorism is a computerized database of international terrorist incidents that have occurred worldwide from 1968 to the present. The chronology has been continuously maintained since 1972 (when it was created by Brian Jenkins), first by RAND and since 1994 by the Centre for the Study of Terrorism and Political Violence at St. Andrews University, Scotland. The in-



SOURCE: The RAND-St. Andrews Chronology of International Terrorism

Figure 1—Number of Worldwide Terrorist Incidents, 1991–1996

international terrorist incidents were recorded in 1991, the year of the Gulf War, followed by 343 incidents in 1992, 360 in 1993, 353 in 1994, falling to 278 incidents in 1995 and to only 250 in 1996 (the last calendar year for which complete statistics are available).¹⁰ Indeed, the 1996 total was the lowest annual tally in 23 years. This overall

incidents in the chronology are concerned with *international terrorism*, defined here as incidents in which terrorists go abroad to strike their targets, select victims or targets that have connections with a foreign state (e.g., diplomats, foreign businessmen, offices of foreign corporations), or create international incidents by attacking airline passengers, personnel, or equipment. It excludes violence carried out by terrorists within their own country against their own nationals, and terrorism perpetrated by governments against their own citizens. *In this respect, it is emphasized that the data collected in the chronology comprise only a fraction of the total volume of terrorist violence, which in turn comprises a fraction of the violence of ongoing armed conflicts. Accordingly, the data contained in the chronology are not necessarily a definitive listing of every international and domestic terrorist incident that has occurred everywhere since 1968. Its value, accordingly, is as a means of identifying terrorist trends and projecting likely future terrorist patterns.*

¹⁰For the purposes of the RAND-St. Andrews Chronology of Terrorism, *terrorism* is defined by the nature of the act, not by the identity of the perpetrators or the nature of the cause. Terrorism is thus taken to mean violence, or the threat of violence, calculated to create an atmosphere of fear and alarm in the pursuit of political aims.

paucity of activity, however, was not reflected by a concomitant decline in the number of fatalities. On the contrary, 1996 was one of the bloodiest years on record. A total of 510 persons were killed: 223 more than in 1995 and 91 more than in 1994. In fact, the 1996 death toll ranks as the fourth highest recorded in the chronology since we began monitoring international terrorism in 1968. Significantly, the U.S. Department of State in its own authoritative compendium and analysis, *Patterns of Global Terrorism 1996*, cites a similar increase in international terrorism's lethality.¹¹ Hence, even though the State Department and the RAND-St. Andrews Chronology have different criteria for defining incidents (which, accordingly, produces different numerical tabulations),¹² we arrive at the same fundamental conclusion: even while terrorists were less active in 1996, they were significantly more lethal.

This development was mostly the result of a handful of so-called terrorist "spectaculars"—that is, the dramatic, attention-riveting, high-lethality acts that so effectively capture the attention of the media and public alike. Hence, although the number of international terrorist incidents that killed eight or more people increased only slightly in 1996 (from eight in 1995 to 13), the effect was nonetheless profound in that it was this relatively small number of incidents that accounted for the year's dramatically high body count.

International terrorism's overall trend toward increasing lethality is also reflected in the percentage of international terrorist incidents that result in one or more fatalities. For example, only 14 percent of all incidents in 1991 killed anyone, rising to 17.5 percent in 1992, 24 percent in 1993, and 27 percent in 1994 before reaching a record high of 29 percent in 1995. During 1996, admittedly, this percentage declined, as only 24 percent of incidents resulted in deaths. But at the

¹¹Indeed, the second sentence of the first paragraph of the State Department report notes that "the total number of casualties [in 1996] was one of the highest ever recorded. . . ." Office of the Coordinator for Counterterrorism, *Patterns of Global Terrorism, 1996*, U.S. Department of State, Publication 10433, Washington, DC, April 1997, p. 1.

¹²The principal numerical differences between the RAND-St. Andrews Chronology's figures and the State Department's are in total number of international incidents (the State Department's figure is 296), number of fatalities (the State Department cites 311), and number of incidents with fatalities (the State Department notes 45 compared with the 60 that we identify).

same time, it should be recalled that even this smaller percentage is higher than the 17 percent average recorded during the 1970s and the 19 percent average during the 1980s.

A number of reasons account for terrorism's increased lethality. First, there appears to be a pattern that suggests that at least some terrorists have come to believe that attention is no longer as readily obtained as it once was. To their minds, both the public and media have become increasingly inured or desensitized to the continuing spiral of terrorist violence. Accordingly, these terrorists feel themselves pushed to undertake ever more dramatic or destructively lethal deeds today in order to achieve the same effect that a less ambitious or bloody action may have had in the past. For example, when Timothy McVeigh, the convicted bomber of the Alfred P. Murrah Federal Building in Oklahoma City, was asked by his attorney whether he could not have achieved the same effect of drawing attention to his grievances against the U.S. government without killing anyone, he reportedly replied: "That would not have gotten the point across. We needed a body count to make our point."¹³ In this respect, although the April 1995 bombing of the Murrah Building was doubtless planned well in advance, McVeigh may nonetheless have felt driven to surpass in terms of death and destruction the previous month's dramatic and more exotic nerve-gas attack on the Tokyo underground (perpetrated by the Japanese religious sect, the Aum Shinrikyo) to guarantee that his attack would be assured the requisite media coverage and public attention. This equation of publicity and carnage with attention and success thus has the effect of locking some terrorists onto an unrelenting upward spiral of violence to retain the media and public's interest.¹⁴ Similarly, Ramzi Ahmad Yousef, the convicted mastermind of the 1993 New York City World Trade Center bombing, reportedly planned to follow that incident with the simultaneous in-flight bombings of 11 U.S. passenger airliners.¹⁵

¹³Quoted in James Brooke, "Newspaper Says McVeigh Described Role in Bombing," *New York Times*, March 1, 1997.

¹⁴See, for example, David Hearst, "Publicity key element of strategy," *The Guardian* (London), July 31, 1990; and David Pallister, "Provos seek to 'play havoc with British nerves and lifestyle'," *The Guardian* (London), July 31, 1990.

¹⁵James Bone and Alan Road, "Terror By Degree," *The Times Magazine* (London), October 18, 1997.

Second, terrorists have profited from past experience and have become more adept at killing. Not only are their weapons becoming smaller, more sophisticated, and deadlier,¹⁶ but terrorists have greater access to these weapons through their alliances with various rogue states. During the 1980s, for example, Czechoslovakia reportedly sold 1000 tons of Semtex to Libya and an additional 40,000 tons to Syria, North Korea, Iran, and Iraq. All these countries, it should be noted, have long been cited by the U.S. Department of State as sponsors of international terrorism.¹⁷

Indeed, a third reason for terrorism's increased lethality, and one closely tied to the above point, is the active role played by states in supporting and sponsoring terrorism.¹⁸ In its 1997 review of global terrorism patterns, the U.S. State Department designated seven countries as terrorism sponsors: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria. With the exception of the Sudan, which was added in 1993, each of these countries has remained on the list of terrorism patron-states for more than a decade.¹⁹ The assistance that these governments has provided has often enhanced the striking power and capabilities of ordinary terrorist organizations, transforming some groups into entities more akin to elite commando units than the stereotypical Molotov-cocktail wielding or crude pipe-bomb manufacturing anarchist or radical leftist.²⁰

¹⁶For example, the bomb used to destroy Pan Am 103 in 1988 is believed to have been a dual-timer/barometric pressure detonation device, constructed from less than 300 grams of Semtex plastic explosive, no bigger than the small radio it was concealed in. See "Explosive Detection Systems Boosted, Blasted at Hearing," *Counter-Terrorism and Security Intelligence*, February 12, 1990.

¹⁷On a state visit to Britain in 1990, Czech president Vaclav Havel observed that, "If you consider that 200 grams is enough to blow up an aircraft . . . this means world terrorism has enough Semtex to last 150 years." Quoted in Glenn Frankel, "Sale of Explosive to Libya Detailed," *Washington Post*, March 23, 1990.

¹⁸See Cindy C. Combs, *Terrorism in the Twenty-First Century*, Prentice Hall, Saddle River, New Jersey, 1997, pp. 86–88; Bruce Hoffman, *Recent Trends and Future Prospects of Iranian Sponsored International Terrorism*, RAND, R-3783-USDP, March 1990, *passim*; and Walter Laqueur, "Postmodern Terrorism," *Foreign Affairs*, Vol. 75, No. 5, September–October 1996, pp. 26–27.

¹⁹Office of the Coordinator for Counterterrorism, *Patterns of Global Terrorism*, 1996, p. 29.

²⁰It is unlikely that an ordinary (e.g., nonstate-supported terrorist group) could have mounted the 1983 bombing of the U.S. Marine barracks at Beirut International Airport. In addition to the complex logistical and intelligence support that was pro-

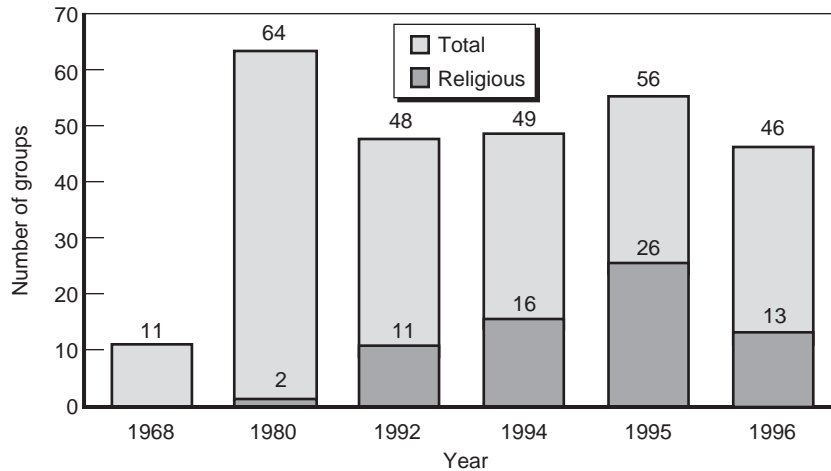
State sponsorship has in fact a “force multiplying” effect on ordinary terrorist groups. It places greater resources in the hands of terrorists, thereby enhancing planning, intelligence, logistical capabilities, training, finances, and sophistication. Moreover, since state-sponsored terrorists do not depend on the local population for support, they need not be concerned about alienating popular opinion or provoking a public backlash.

The attraction for various renegade regimes to use terrorists as “surrogate warriors” has arguably increased since the 1991 Gulf War. The lesson of Iraq’s *overt* invasion of Kuwait, where a UN-backed multinational coalition was almost immediately arrayed against Saddam, suggests that future aggressors may prefer to accomplish their objectives clandestinely with a handful of terrorist surrogates. Not only could such small bands facilitate the destabilization of neighboring or rival states, but if done covertly (and successfully), the state sponsor might escape identification, retaliation, and sanctions. Accordingly, terrorists may in the future come to be regarded by the globe’s rogue states as an ultimate fifth column—a clandestine, cost-effective force used to wage war covertly against more powerful rivals or to subvert neighboring countries or hostile regimes.²¹ Terrorism therefore could be employed as an adjunct to conventional warfare, and as a form of asymmetric strategy vis-à-vis the United States.

Fourth, the overall increase during the past 15 years of terrorism motivated by a religious imperative encapsulates the confluence of new adversaries, motivations, and tactics affecting terrorist patterns today (see Figure 2). While the connection between religion and ter-

vided to the terrorists, the weapon they used was not of the sort found in the typical terrorist group’s arsenal. The truck bomb that destroyed the barracks and killed 241 Marines consisted of some 12,000 pounds of high explosives, whose destructive power was enhanced by canisters of flammable gases attached to the explosive device by its designers. The explosion was described at the time by FBI investigators as the “largest non-nuclear blast ever detonated on the face of the earth.” Quoted in Eric Hammel, *The Root: The Marines in Beirut, August 1982–February 1984*, Harcourt Brace Jovanovich, San Diego, California, 1985, p. 303.

²¹Accusations of Iran’s fomenting subversion in Bahrain and its alleged role in the bombing of the Khobar Towers military housing complex in Dhahran, Saudi Arabia, in July 1996 and of a joint Saudi-American military training facility in Riyadh in November 1995 may already be indicative of this trend.



SOURCE: The RAND-St. Andrews Chronology of International Terrorism

Figure 2—Religious Versus Other Terrorist Groups

rorism is not new,²² in recent decades this variant has largely been overshadowed by ethnic- and nationalist-separatist or ideologically motivated terrorism. Indeed, none of the 11 identifiable terrorist groups²³ active in 1968 (the year credited with marking the advent of modern, international terrorism) could be classified as religious.²⁴ Not until 1980 in fact—as a result of repercussions from the revolution in Iran the year before—do the first “modern” religious

²²As David C. Rapoport points out in his seminal study of what he terms “holy terror,” until the 19th century, “religion provided the only acceptable justifications for terror” (see David C. Rapoport, “Fear and Trembling: Terrorism in Three Religious Traditions,” *American Political Science Review*, Vol. 78, No. 3, September 1984, p. 659).

²³Numbers of active, *identifiable* terrorist groups from 1968 to the present are derived from the RAND-St. Andrews Chronology of International Terrorism.

²⁴Admittedly, many contemporary terrorist groups—such as the overwhelmingly Catholic Provisional Irish Republic Army; their Protestant counterparts arrayed in various Loyalist paramilitary groups like the Ulster Freedom Fighters, the Ulster Volunteer Force, and the Red Hand Commandos; and the predominantly Muslim Palestine Liberation Organization—have a strong religious component by virtue of their membership. However, it is the political and not the religious aspect that is the dominant characteristic of these groups, as evidenced by the preeminence of their nationalist and/or irredentist aims.

terrorist groups appear,²⁵ although they amount to only two of the 64 groups active that year. Twelve years later, however, the number of religious terrorist groups has increased nearly six-fold, representing a quarter (11 of 48) of the terrorist organizations that carried out attacks in 1992. By 1994, a third (16) of the 49 identifiable terrorist groups could be classified as religious in character and/or motivation, and in 1995 they accounted for nearly half (26 or 46 percent) of the 56 known terrorist groups active that year. In 1996, however, only 13 (28 percent) of the 46 identifiable terrorist groups had a dominant religious component. Nevertheless, despite this decline in the 1996 figure, religion remained a significant force behind terrorism's rising lethality. Groups motivated in part or in whole by a salient religious or theological motivation committed ten of the 13 terrorist spectacles recorded in 1996.²⁶

The implications of terrorism motivated by a religious imperative for higher levels of lethality is evidenced by the violent record of various Shi'a Islamic groups during the 1980s. For example, although these organizations committed only 8 percent of all recorded international terrorist incidents between 1982 and 1989, they were nonetheless responsible for nearly 30 percent of the deaths during that time period.²⁷ Indeed, some of the most significant terrorist acts of recent years have had some religious element present. These include

- the 1993 bombing of New York City's World Trade Center by Islamic radicals who deliberately attempted to topple one of the twin towers onto the other;
- the series of 13 near-simultaneous car and truck bombings that shook Bombay, India, in February 1993, killing 400 persons and

²⁵These are the Iranian-backed Shi'a groups *al-Dawa* and the Committee for Safeguarding the Islamic Revolution.

²⁶The Palestinian Islamic Resistance Movement, Hamas, was responsible for three incidents (which killed a total of 56 persons); the Jammu and Kashmir Liberation Front for two (killing 37); a shadowy Saudi Arabian dissident group for two (causing 30 fatalities); the Egyptian al-Gama'a al-Islamiya for one (18 persons died); unspecified Kashmiri rebels for another incident (where eight persons died); and the Turkish Islamic Jihad for the remaining one (in which 17 persons perished).

²⁷Between 1982 and 1989, Shi'a terrorist groups committed 247 terrorist incidents but were responsible for 1057 deaths.

injuring more than 1000 others, in reprisal for the destruction of an Islamic shrine in that country;

- the December 1994 hijacking of an Air France passenger jet by Islamic terrorists belonging to the Algerian Armed Islamic Group (GIA) and the attendant foiled plot to blow up themselves, the aircraft, and the 283 passengers on board precisely when the plane was over Paris, thus causing the flaming wreckage to plunge into the crowded city below;²⁸
- the March 1995 sarin nerve-gas attack on the Tokyo subway system, perpetrated by an apocalyptic Japanese religious cult (Aum Shinrikyo) that killed a dozen persons and wounded 3796 others²⁹; reportedly the group also planned to carry out identical attacks in the United States;³⁰
- the bombing of an Oklahoma City federal office building in April 1995, where 168 persons perished, by two Christian Patriots seeking to foment a nationwide race revolution;³¹
- the wave of bombings unleashed in France by the Algerian GIA between July and October 1995, of metro trains, outdoor markets,

²⁸The hijackers' plans were foiled after the French authorities learned of their intentions and ordered commandos to storm the aircraft after it had landed for refueling in Marseilles.

²⁹Murray Sayle, "Martyrdom Complex," *The New Yorker*, May 13, 1996.

³⁰Nicholas D. Kristof, "Japanese Cult Planned U.S. Attack," *International Herald Tribune* (Paris), 24 March 1997; and Robert Whymant, "Cult planned gas raids on America," *The Times* (London), March 29, 1997.

³¹It is mistaken to view either the American militia movement or other contemporary white supremacist organizations (from which McVeigh and his accomplice Terry L. Nichols came) as simply militant anti-federalist or extremist tax-resistance movements. The aims and motivations of these groups in fact span a broad spectrum of anti-federalist and seditious beliefs coupled with religious hatred and racial intolerance, masked by a transparent veneer of religious precepts. They are bound together by the ethos of the broader Christian Patriot movement that actively incorporates Christian scripture in support of their violent activities and use biblical liturgy to justify their paranoid call-to-arms. For a more detailed analysis, see Hoffman, *Inside Terrorism*, pp. 105–120. Further, it should be noted that McVeigh openly admitted to interviewers his belief in Christian Patriotism and involvement in Patriot activities, thus tacitly admitting his adherence to the theological belief system briefly described above. See Tim Kelsey, "The Oklahoma suspect awaits day of reckoning," *The Sunday Times* (London), April 21, 1996.

cafes, schools, and popular tourist spots, that killed eight persons and wounded more than 180 others;

- the assassination in November 1995 of Israeli Prime Minister Itzhak Rabin by a religious Jewish extremist and its attendant significance as the purported first step in a campaign of mass murder designed to disrupt the peace process;
- the Hamas suicide bombers who turned the tide of Israel's national elections with a string of bloody attacks that killed 60 persons between February and March 1996;
- the Egyptian Islamic militants who carried out a brutal machine-gun and hand-grenade attack on a group of Western tourists outside their Cairo hotel in April 1996 that killed 18;
- the June 1996 truck bombing of a U.S. Air Force barracks in Dhahran, Saudi Arabia, where 19 persons perished, by religious militants opposed to the reigning al-Saud regime;
- the unrelenting bloodletting by Islamic extremists in Algeria itself that has claimed the lives of more than an estimated 75,000 persons there since 1992;
- the massacre in November 1997 of 58 foreign tourists and four Egyptians by terrorists belonging to the Gamat al-Islamiya (Islamic Group) at the Temple of Queen Hatsheput in Luxor, Egypt; and
- the bombings of the U.S. embassies in Kenya and Tanzania in August 1998 that killed 257 and injured some 5000 others.

As the above incidents suggest, terrorism motivated in whole or in part by religious imperatives has often led to more intense acts (or attempts) of violence that have produced considerably higher levels of fatalities—at least compared with the relatively more discriminate and less lethal incidents of violence perpetrated by secular terrorist organizations. In brief, religious terrorism³² tends to be more lethal than secular terrorism because of the radically different value sys-

³²For a more complete and detailed discussion of this category of terrorist organization, see Bruce Hoffman, "Holy Terror: The Implications of Terrorism Motivated By a Religious Imperative," *Studies in Conflict and Terrorism*, Vol. 18, No. 4, Winter 1995, which was also published by RAND under the same title, P-7834, July 1993.

tems, mechanisms of legitimization and justification, concepts of morality, and Manichean world views that directly affect the “holy terrorists’” motivation. For the religious terrorist, violence is a sacramental act or divine duty, executed in direct response to some theological demand or imperative and justified by scripture. Religion therefore functions as a legitimizing force, specifically sanctioning wide-scale violence against an almost open-ended category of opponents (i.e., all peoples who are not members of the religious terrorists’ religion or cult). This explains why clerical sanction is so important for religious terrorists³³ and why religious figures are often required to “bless” (e.g., approve) terrorist operations before they are executed.

Fifth, the proliferation of amateurs taking part in terrorist acts has also contributed to terrorism’s increasing lethality. In the past, terrorism was not just a matter of having the will and motivation to act, but of having the capability to do so—the requisite training, access to weaponry, and operational knowledge. These were not readily available capabilities and were generally acquired through training undertaken in camps run either by other terrorist organizations and/or in concert with the terrorists’ state sponsors.³⁴

Today, however, the means and methods of terrorism can be easily obtained at bookstores, from mail-order publishers, on CD-ROM, or over the Internet. Terrorism has become accessible to anyone with a grievance, an agenda, a purpose, or any idiosyncratic combination of the above. Relying on commercially obtainable bomb-making manuals and operational guidebooks, the amateur terrorist can be just as

³³Examples are the aforementioned *fatwa* (Islamic religious edict) issued by bin Laden and the one issued by Iranian Shi’a clerics in 1989 calling for the novelist Salman Rushdie’s death; the “blessing” given to the bombing of New York City’s World Trade Center by the Egyptian Sunni cleric Sheikh Omar Abdel Rahman; the dispensation given by extremist rabbis to right-wing Jewish violence against Arabs in Israel, the West Bank, and Gaza; the approval given by Islamic clerics in Lebanon for Hizbullah operations and by their counterparts in the Gaza Strip for Hamas attacks; and the pivotal role over his followers played by Shoko Ashara, the religious leader of Japan’s Aum Shinrikyo sect.

³⁴Examples include the estimated dozen or so terrorist training camps long operated under Syria’s aegis in Lebanon’s Bekka Valley; the various training bases that have been identified over the years in the Yemen, Tunisia, the Sudan, Iran, Afghanistan, and elsewhere; and, of course, the facilities maintained during the Cold War by the Eastern Bloc.

deadly and destructive³⁵—and even more difficult to track and anticipate—than his professional counterpart.³⁶

Amateur terrorists are dangerous in other ways as well. The absence of a central command authority may result in fewer constraints on the terrorists' operations and targets and—especially when combined with a religious fervor—fewer inhibitions about indiscriminate casualties. Israeli authorities, for example, have noted this pattern among terrorists belonging to the radical Palestinian Islamic Hamas organization in contrast to their predecessors in the more secular, professional, and centrally controlled mainstream Palestine Liberation Organization (PLO) terrorist groups. As one senior Israeli security official noted of a particularly vicious band of Hamas terrorists: they “were a surprisingly unprofessional bunch . . . they had no preliminary training and acted without specific instructions.”³⁷

In the United States, to cite another example of the lethal power of amateur terrorists, it is suspected that the 1993 World Trade Center bombers' intent was in fact to bring down one of the twin towers.³⁸ By contrast, there is no evidence that the persons we once considered to be the world's arch-terrorists—Carlos, Abu Nidal, and Abu Abbas—ever contemplated, much less attempted, destruction of a high-rise office building packed with people.

³⁵Examples of “amateurs” include the followers of Shoko Ashara who perpetrated the Tokyo nerve-gas attacks; the two men who were convicted of mixing fertilizer and diesel-fuel together to bomb the federal building in Oklahoma City; the Algerian youths deliberately recruited into the terrorist campaign that was waged in Paris between July and October 1995 which had been initiated by their more professional counterparts in the Armed Islamic Group (see the discussion immediately below); and Israeli Prime Minister Rabin's assassin.

³⁶Indeed, the situation that unfolded in France during this time period provides perhaps the most compelling evidence of the increasing salience of amateurs recruited or suborned by professional terrorists for operational purposes. French authorities believe that, while professional terrorists belonging to the Algerian GIA may have perpetrated the initial wave of bombings, like-minded amateurs—drawn from within France's large and increasingly restive Algerian expatriate community—were responsible for at least some of the subsequent attacks.

³⁷Quoted in Joel Greenberg, “Israel Arrests 4 In Police Death,” *New York Times*, 7 June 1993; and Eric Silver, “The Shin Bet's ‘Winning’ Battle,” *The Jewish Journal* (Los Angeles), June 11–17, 1993.

³⁸Matthew L. Wald, “Figuring What It Would Take to Take Down a Tower,” *New York Times*, March 21, 1993.

Indeed, much as the “inept” World Trade Center bombers were derided for their inability to avoid arrest, their *modus operandi* arguably points to a pattern of future terrorist activities elsewhere. For example, as previously noted, terrorist groups were once recognizable as distinct organizational entities. The four convicted World Trade Center bombers shattered this stereotype. Instead they were like-minded individuals who shared a common religion, worshipped at the same religious institution, had the same friends and frustrations, and were linked by family ties as well, who simply gravitated toward one another for a specific, perhaps even one-time, operation.³⁹

Moreover, since this more amorphous and perhaps even transitory type of group will lack the footprints or *modus operandi* of an actual, existing terrorist organization, it is likely to prove more difficult for law enforcement to build a useful picture of the dimensions of their intentions and capabilities. Indeed, as one New York City police officer only too presciently observed two months before the Trade Center attack: it was not the established terrorist groups—with known or suspected members and established operational patterns—that worried him, but the hitherto unknown “splinter groups,” composed of new or marginal members from an older group, that suddenly surface out of nowhere to attack.⁴⁰

Essentially part-time terrorists, such loose groups of individuals may be—as the World Trade Center bombers themselves appear to have been—*indirectly* influenced or remotely controlled by some foreign government or nongovernmental entity. The suspicious transfer of funds from banks in Iran and Germany to a joint account maintained

³⁹The four bombers appear to have joined forces based on their attendance at the same place of worship (a Jersey City, New Jersey mosque). Family ties played a part as well: Ibrahim A. Elgabrowni, who although not charged with the Trade Center bombing specifically, was nonetheless implicated in the crime and was convicted in the subsequent plot to free the bombers, is the cousin of El Sayyid A. Nosair, who was implicated in the Trade Center bombing. Elgabrowni was among the 13 persons convicted in the follow-on plans to obtain the bombers' release, and was already serving a prison sentence in connection with the November 1990 assassination of Rabbi Meir Kahane. See Jim McGee and Rachel Stassen-Berger, “5th Suspect Arrested in Bombing,” *Washington Post*, March 26, 1993; and Alison Mitchell, “Fingerprint Evidence Grows in World Trade Center Blast,” *New York Times*, May 20, 1993.

⁴⁰Interview with RAND research staff in New York City, November 1992.

by the accused bombers in New Jersey just before the Trade Center blast, for example, may be illustrative of an indirect or circuitous foreign connection.⁴¹ Moreover, the fact that two of the group's ringleaders—Ramzi Ahmed Yousef and Abdul Rahman Yasin—appear to have come to the United States specifically with the intent of orchestrating the attack raises suspicions that the incident may from the start have been planned and orchestrated from abroad.⁴² Thus, in contrast to the Trade Center bombing's depiction in the press as a terrorist incident perpetrated by a group of amateurs acting either entirely on their own or as manipulated by Yousef, an individual portrayed by one of the bomber's defense attorneys as a "devious, evil . . . genius,"⁴³ the genesis of the Trade Center attack may be far more complex.

This use of amateur terrorists as dupes or cut-outs to mask the involvement of a foreign patron or government could potentially benefit terrorist state sponsors by enabling them to more effectively conceal their involvement and thus avoid potential military retaliation or diplomatic and economic sanctions. The prospective state sponsors' connection could be further obscured by the fact that much of the amateur terrorists' equipment, resources, and even funding could be entirely self-generating. The explosive device used at the World Trade Center, for example, was constructed out of ordinary, commercially available materials—including lawn fertilizer

⁴¹Federal authorities reported that they had traced nearly \$100,000 in funds that had been wired to some of the suspects from abroad, including transfers made from Iran. An additional \$8000 had been transferred from Germany into a joint bank account maintained by two of the bombers. Ralph Blumenthal, "\$100,000 From Abroad Is Linked to Suspects in the Trade Center Explosion," *New York Times*, 15 February 1993. According to one of the other convicted bombers, Mahmud Abouhalima, funds had also been routed through the militant Egyptian Islamic group, *Gamat al-Islamiya*, whose spiritual leader is Sheikh Omar Abdel Rahman, who was convicted in connection with the June 1993 plot, and by the radical transnational Muslim Brotherhood organization. Additional financing reputedly was provided by and via Iranian businesses and Islamic institutions in Saudi Arabia and Europe. Mary B.W. Tabor, "Lingering Questions on Bombing," *New York Times*, September 14, 1994.

⁴²Ralph Blumenthal, "Missing Bombing Case Figure Reported to Be Staying in Iraq," *New York Times*, June 10, 1993.

⁴³Richard Bernstein, "Lawyer in Trade Center Blast Case Contends that Client Was a Dupe," *New York Times*, February 16, 1994. See also Tom Morganthau, "A Terrorist Plot Without a Story," *Newsweek*, February 28, 1994.

(urea nitrate) and diesel fuel—and cost less than \$400 to build.⁴⁴ Indeed, despite the Trade Center bombers' almost comical ineptitude in avoiding capture (one member of the group attempted to collect the deposit for the demolished rental truck in which the bomb was concealed), they were still able to shake an entire city's—if not country's—complacency. Further, the simple bomb used by these amateurs proved just as deadly and destructive—killing six persons, injuring more than 1000 others, gouging out a 180-ft-wide crater six stories deep, and causing an estimated \$550 million in damages to the twin tower and lost revenue to the business housed there⁴⁵—as the more high-tech devices constructed out of military ordnance used by their professional counterparts.⁴⁶

⁴⁴The Trade Center bomb was composed of some 1200 lb of “common sulfuric and nitric acids used in dozens of household products and urea used to fertilize lawns.” The detonating device was a more complex and extremely volatile mixture of nitroglycerin enhanced by tanks of compressed hydrogen gases that were designed to increase the force of the blast. Richard Bernstein, “Lingering Questions on Bombing: Powerful Device, Simple Design,” *New York Times*, September 14, 1994. See also Richard Bernstein, “Expert Can’t Be Certain of Bomb Contents at Trial,” *New York Times*, January 21, 1994. Richard Bernstein, “Nitro-glycerin and Shoe at Center of Blast Trial Testimony,” *New York Times*, 27 January 1994; Richard Bernstein, “Witness Sums Up Bombing Evidence,” *New York Times*, February 7, 1994; Edward Barnes et al., “The \$400 Bomb,” *Time*, March 22, 1993; and Tom Morganthau, “A Terrorist Plot Without a Story,” *Newsweek*, February 28, 1994.

Similarly, in April 1988 a Japanese Red Army terrorist, Yu Kikumura, was arrested on the New Jersey Turnpike while en route to New York City on a bombing mission. Kikumura's mission was to carry out a bombing attack against a U.S. Navy recruiting station in lower Manhattan on 15 April to commemorate the second anniversary of the 1986 U.S. air strike against Libya. He is believed to have undertaken this operation at the behest of Libya's Colonel Qaddafi. Between his arrival in the United States on 14 March and his arrest a month later, Kikumura traveled some 7000 miles by car from New York to Chicago, through Kentucky, Tennessee, West Virginia, and Pennsylvania, purchasing materials for his bomb along the way. Found in his possession were gunpowder and hollowed-out fire extinguishers in which to place explosive materials and roofing nails to make crude anti-personnel weapons. Kikumura was sentenced to 30 years in prison. See Robert Hanley, “Suspected Japanese Terrorist Convicted in Bomb Case in New Jersey,” *New York Times*, November 29, 1988; and Business Risks International, *Risk Assessment Weekly*, Vol. 5, No. 29, July 22, 1988.

⁴⁵N. R. Kleinfeld, “Legacy of Tower Explosion: Security Improved, and Lost,” *New York Times*, February 20, 1993; and Richard Bernstein, “Lingering Questions on Bombing: Powerful Device, Simple Design,” *New York Times*, September 14, 1994.

⁴⁶This is remarkably similar to the pattern of terrorist activity and operations that unfolded in France nearly two years later. See the discussion below.

Sixth, while on the one hand terrorism is attracting amateurs, on the other hand the sophistication and operational competence of the professional terrorists are increasing. These professionals are becoming demonstrably more adept in their tradecraft of death and destruction; more formidable in their capacity for tactical modification and innovation in their methods of attack; and more able to operate for sustained periods while avoiding detection, interception, or capture.

An almost Darwinian principle of natural selection thus seems to affect terrorist organizations, whereby every new terrorist generation learns from its predecessors—becoming smarter, tougher, and more difficult to capture or eliminate. Terrorists often analyze the mistakes made by former comrades who have been killed or apprehended. Press accounts, judicial indictments, courtroom testimony, and trial transcripts are meticulously culled for information on security force tactics and methods and then absorbed by surviving group members. The third generation of the now defunct Red Army Faction (RAF)⁴⁷ that emerged in the late 1980s is a classic example of this phenomenon. According to a senior German official, group members routinely studied court documents and transcripts of proceedings to gain insight into the measures employed by the authorities against terrorists. Having learned about these techniques—often from testimony presented by law enforcement personnel in open court (in some instances having been deliberately questioned on these matters by sympathetic attorneys)—the terrorists consequently are able to undertake the requisite countermeasures to avoid detection. For example, after learning that German police could obtain fingerprints from the bottom of toilet seats or the inside of refrigerators, surviving RAF members began to apply a special ointment to their fingers that, after drying, prevented fingerprints from being left and thus thwarted members' identification and incrimination.⁴⁸ As a spokesperson for the *Bundeskriminalamt* lamented in the months immediately preceding the RAF's unilateral declaration of a cease-

⁴⁷The RAF's decision to disband (announced in April 1998) cited the group's growing political estrangement and isolation, rather than governmental countermeasures, as the most important reason for its dissolution.

⁴⁸See Frederick Kempe, "Deadly Survivors: The Cold War Is Over But Leftist Terrorists In Germany Fight On," *Wall Street Journal*, December 27, 1991.

fire in April 1992, the “‘Third Generation’ learnt a lot from the mistakes of its predecessors—and about how the police works . . . they now know how to operate very carefully.”⁴⁹ Indeed, according to a former member of the group, Peter-Juergen Brock (now serving a life sentence for murder), the RAF before the cease-fire had “reached maximum efficiency.”⁵⁰

Similar accolades have in recent years also been bestowed on the IRA. At the end of his tour of duty in 1992 as General Officer Commanding British Forces in Northern Ireland, General Sir John Wilsey described the organization as “an absolutely formidable enemy. The essential attributes of their leaders are better than ever before. Some of their operations are brilliant in terrorist terms.”⁵¹ By this time, too, even the IRA’s once comparatively unsophisticated Loyalist terrorist counterparts had absorbed the lessons from their own past mistakes and had consciously emulated the IRA to become disquietingly more professional as well. One senior Royal Ulster Constabulary (RUC) officer noted this change in the Loyalists’ capabilities, observing that they too were now increasingly “running their operations from small cells, on a need to know basis. They have cracked down on loose talk. They have learned how to destroy forensic evidence. And if you bring them in for questioning, they say nothing.”⁵²

In this respect, it is not difficult to recognize how the amateur terrorist may become increasingly attractive to either a more professional terrorist group and/or their state patron as a pawn or cut-out or simply as an expendable minion. In this manner, the amateur terrorist could be effectively used by others to conceal further the identity of the foreign government or terrorist group actually commissioning or ordering a particular attack. The series of terrorist attacks that unfolded in France conforms to this pattern. Between July and October 1995, a handful of terrorists using bombs fashioned with

⁴⁹Quoted in Adrian Bridge, “German police search for Red Army Faction killers,” *The Independent* (London), April 6, 1991.

⁵⁰Quoted in Kempe, “Deadly Survivors.”

⁵¹Quoted in Edward Gorman, “How to stop the IRA,” *The Times* (London), January 11, 1992.

⁵²Quoted in William E. Schmidt, “Protestant Gunmen Are Stepping Up the Violence in Northern Ireland,” *New York Times*, October 29, 1991.

four-inch nails wrapped around camping-style cooking-gas canisters killed eight persons and wounded more than 180 others. Not until early October 1995 did any group claim credit for the bombings, when the radical GIA, a militant Algerian Islamic organization, took responsibility for the attacks. French authorities, however, believe that although professional terrorists perpetrated the initial bombings, like-minded amateurs—recruited by GIA operatives from within France's large and increasingly restive Algerian expatriate community—were responsible for at least some of the subsequent attacks.⁵³ Accordingly, these amateurs or new recruits facilitated the campaign's metastasizing beyond the small cell of professionals who ignited it, striking a responsive chord among disaffected Algerian youths in France and thereby increasing exponentially the aura of fear and, arguably, the terrorists' coercive power.

Finally, terrorism's increasing lethality may also be reflected in the fact that terrorists today tend to claim credit for their attacks less frequently. Unlike the more traditional terrorist groups of the 1970s and 1980s who not only issued communiqués explaining why they carried out an attack but proudly boasted of having executed a particularly destructive or lethal attack, terrorists are now appreciably more reticent. For example, some of the most serious terrorist incidents of the past decade, the so-called terrorist spectacles, have never been credibly claimed—much less explained or justified as terrorist attacks—by the groups responsible. Events include

- the 1995 sarin nerve-gas attack on the Tokyo subway;
- the bombing of the Alfred P. Murrah Federal Office Building in Oklahoma City;
- the series of car bombings that convulsed Bombay in 1993, killing 317 persons; and

⁵³For accounts of the bombing campaign, see, for example, Susan Bell, "16 hurt in Paris nail-bomb blast," *Times* (London), August 18, 1995; Adam Sage, "Paris faces autumn of terror as fifth bomb is discovered," *Times* (London), September 5, 1995; Adam Sage, "French hold 40 in hunt for bomb terrorists," *Times* (London), September 12, 1995; Alex Duval Smith, "Police fight 'war' in French suburbs," *Guardian* (London), November 1, 1995; and Craig R. Whitney, "French Police Arrest Suspected Leader of Islamic Militant Group," *New York Times*, November 3, 1995. See also "Terrorism: Political Backdrop to Paris Attacks," *Intelligence Newsletter* (Paris), No. 274, October 26, 1995, pp. 6–7.

- the huge truck bomb that destroyed a Jewish community center in Buenos Aires in 1994, killing 96.

The in-flight bombing of Pan Am 103, in which 278 persons perished, is an especially notorious example. Although we know that two Libyan government airline employees were identified and accused of placing the suitcase containing the bomb that eventually found its way onto the flight, no believable claim of responsibility has ever been issued.

The implication of this trend is that violence for some terrorist groups is perhaps becoming less a means to an end (that therefore has to be tailored and explained and justified to the public) than an end in itself that does not require any wider explanation or justification beyond the group's members themselves and perhaps their followers. Such a trait would conform not only to the motivations of religious terrorists (as previously discussed) but also to terrorist "spoilers"—e.g., groups bent on disrupting or sabotaging negotiations or the peaceful settlement of ethnic conflicts. That terrorists are less frequently claiming credit for their attacks may also suggest an inevitable loosening of constraints—self-imposed or otherwise—on their violence, which may in turn lead to higher levels of lethality.⁵⁴

TERRORIST TACTICAL ADAPTATIONS ACROSS THE TECHNOLOGICAL SPECTRUM AND THEIR IMPLICATIONS

The trends described above shed light on a pattern of terrorist operations and tactical adaptation that underscores the dynamic and broad technological dimensions of the threat. These developments are likely to affect counterterrorism responses directly.

A key factor contributing to terrorism's rising lethality is the ease of terrorist adaptations across the technological spectrum. On the low

⁵⁴For a more complete discussion of the no claim/increasing lethality issue, see Bruce Hoffman, "Why Terrorists Don't Claim Credit—An Editorial Comment," *Terrorism and Political Violence*, Vol. 9, No. 1, Spring 1997, and the more concise version published as "A New Kind of Terrorism: Silence is Deadlier," *Los Angeles Times* Sunday Opinion Section, August 18, 1996.

end of the technological spectrum, terrorists continue to rely on fertilizer bombs. These bombs' devastating effects have been demonstrated by the IRA at St. Mary Axe and Bishop's Gate in 1991 and 1992, at Canary Wharf and in Manchester in 1996, by the World Trade Center bombers, and by the men responsible for the Oklahoma City bombing. Fertilizer is perhaps the most cost-effective of weapons, costing on average 1 percent of a comparable amount of plastic explosive. To illustrate, the Bishop's Gate blast is estimated to have caused \$1.5 billion⁵⁵ and the Baltic Exchange blast at St. Mary Axe \$1.25 billion in damage.⁵⁶ The World Trade Center bomb cost only \$400 to construct, but resulted in \$550 million in damages and lost revenue to the business housed there.⁵⁷ Moreover, unlike plastic explosives and other military ordnance, fertilizer and at least two of its most common bomb-making counterparts—diesel fuel and icing sugar—are easily available commercially and completely legal to purchase and store, and are thus highly attractive “weapons components” for terrorists.⁵⁸

On the high end of the conflict spectrum, one must contend with not only the efforts of groups like the apocalyptic Japanese religious sect, the Aum Shinrikyo, to develop nuclear in addition to chemical and

⁵⁵William E. Schmidt, “One Dead, 40 Hurt as Blast Rips Central London,” *New York Times*, April 25, 1993; and Richard W. Stevenson, “I.R.A. Says It Placed Fatal Bomb; London Markets Rush to Reopen,” *New York Times*, April 26, 1993.

⁵⁶William E. Schmidt, “One Dead, 40 Hurt as Blast Rips Central London,” *New York Times*, April 25, 1993. See also William E. Schmidt, “With London Still in Bomb Shock, Major Appoints His New Cabinet,” *New York Times*, April 12, 1992; “Delays Seen in London,” *New York Times*, April 13, 1992; Peter Rodgers, “City bomb claims may reach £1bn,” *The Independent* (London), April 14, 1992; and David Connett, “IRA city bomb was fertilizer,” *The Independent* (London), May 28, 1992.

⁵⁷Although, after adulteration, fertilizer is far less powerful than plastic explosive, it tends to cause more damage than plastic explosive because the energy of the blast is sustained and less controlled (see Roger Highfield, “Explosion could have wrecked city centre,” *Daily Telegraph* (London), August 13, 1993). For example, the velocity of detonation of plastic explosive like Semtex occurs at about 8000 meters per second; the velocity of detonation of improvised explosives using ammonium nitrate (fertilizer) will typically occur at between 2000–3000 meters per second (depending on the mixture) and thus are less powerful (A. Bailey and S. G. Murray, *Explosives, Propellants and Pyrotechnics*, Brassey's, London, 1989, pp. 33–34; and Jimmie C. Oxley, “Non-Traditional Explosive: Potential Detection Problems,” in Paul Wilkinson (ed.), *Technology and Terrorism*, Frank Cass, London, 1993, pp. 34–37.

⁵⁸Roger Highfield, “Explosion could have wrecked city centre,” *Daily Telegraph* (London), August 13, 1993.

biological capabilities,⁵⁹ but the proliferation of fissile materials from the former Soviet Union and the emergent illicit market in nuclear materials that is surfacing in Eastern and Central Europe.⁶⁰ Admittedly, although much of the material seen on sale as part of this black market cannot be classified as special nuclear material suitable for use in a fissionable explosive device, highly toxic radioactive agents can potentially be paired with conventional explosives and turned into a crude, nonfissionable radiological weapon. Such a device would not only physically destroy a target, but contaminate the surrounding area and render recovery efforts commensurably more difficult and complicated.⁶¹

Finally, at the middle range of the spectrum one sees a world awash in plastic explosives, hand-held precision-guided munitions (PGMs) that could be used against civilian and/or military aircraft, and automatic weapons that facilitate a wide array of terrorist operations.⁶² In recent years, for example, surface-to-air missiles reputedly could be purchased on the international arms black market for

⁵⁹For the most complete account of the Aum activities in this respect, see David E. Kaplan and Andrew Marshall, *The Cult at the End of the World: The Incredible Story of Aum*, Hutchinson, London, 1996, *passim*. See also John F. Sopko, "The Changing Proliferation Threat," *Foreign Policy*, No. 105, Winter 1996-97, pp. 12-14.

⁶⁰See, for example, Graham T. Allison et al., *Avoiding Nuclear Anarchy: Containing the Threat of Loose Russian Nuclear Weapons and Fissile Material*, The MIT Press, Cambridge, Massachusetts, 1996; Frank Barnaby, "Nuclear Accidents Waiting To Happen," *The World Today* (London), Vol. 52, No. 4, April 1996; Thomas B. Cochran, Robert S. Norris, and Oleg A. Bukharin, *Making the Russian Bomb: From Stalin to Yeltsin*, Westview Press, Boulder, Colorado, 1995; William C. Potter, "Before the Deluge? Assessing the Threat of Nuclear Leakage from the Post-Soviet States," *Arms Control Today*, October 1995; Phil Williams and Paul N. Woessner, "Nuclear Material Trafficking: An Interim Assessment," *Transnational Organized Crime*, Vol. 1, No. 2, Summer 1995; and Paul N. Woessner, "Recent Developments: Chronology of Nuclear Smuggling Incidents, July 1991-May 1995," *Transnational Organized Crime*, Vol. 1, No. 2, Summer 1995.

⁶¹For example, a combination fertilizer truck bomb with radioactive agents would not only have destroyed one of the World Trade Towers, but rendered a considerable chunk of prime real estate in the world's financial nerve center indefinitely unusable because of radioactive contamination. The disruption to commerce that would be caused, the attendant publicity, and the enhanced coercive power of terrorists armed with such "dirty" bombs (which are arguably more credible threats than terrorist acquisition of fissile nuclear weapons) are fundamentally disquieting.

⁶²See James Adams, *Engines of War: Merchants of Death and the New Arms Race*, Atlantic Monthly Press, New York, 1990, *passim*.

as little as \$80,000.⁶³ Terrorists therefore now have relatively easy access to a range of sophisticated, off-the-shelf weapons technology that can be readily adapted to their operational needs.

The potential impact of cyberwar and information warfare on societies in general and on military facilities, communications, and operations in particular needs also to be considered. Terrorists or their state-patrons could attempt to sabotage networks in order to disrupt communications or even orchestrate disasters. Equally likely is terrorist targeting of classified (or other access-controlled) information systems to obtain intelligence with which to facilitate operations, or for counterintelligence purposes to more effectively thwart counterterrorism efforts. What is clear, however, is information warfare's potential force-multiplying effect on terrorist operations by providing such adversaries with either enhanced intelligence with which to facilitate more conventional terrorist operations or as a means to cause destruction and disruption without having to undertake actual physical attacks.⁶⁴

Force Protection: The Example of IRA Targeting of British Forces in Northern Ireland

The Provisional Irish Republican Army's relentless quest to pierce the armor protecting the security forces in Northern Ireland illustrates the professional evolution and increasing operational sophistication of a terrorist group in affecting technological improvements and tactical adaptations. The first generation of early 1970s IRA de-

⁶³See Steve LeVine, "U.S. now worries terrorists may get Stingers," *Washington Times*, December 31, 1991; Robert S. Greenberger, "Afghan Guerrilla Leader Armed by U.S., Hekmatyar, Could Prove Embarrassing," *Wall Street Journal*, May 11, 1992; and Richard S. Ehrlich, "For Sale in Afghanistan: U.S.-supplied Stingers," *Washington Times*, May 21, 1991.

⁶⁴See John Arquilla and David Ronfeldt, "Cyberwar is Coming!" *Comparative Strategy*, Vol. 12, No. 2, pp. 141-165; Roger C. Molander, *Strategic Information Warfare: A New Face of War*, RAND, M-661-OSD, 1996; U.S. General Accounting Office, *Information Security: Computer Attacks at Department of Defense Pose Increasing Risks*, Washington, D.C., GAO/AIMD-96-84, May 1996; John Deutch, Director of U.S. Central Intelligence Agency, *Statement before the U.S. Senate Governmental Affairs Committee, Permanent Subcommittee on Investigations*, 25 June 1996; and U.S. Senate Permanent Subcommittee on Investigations (Minority Staff Statement), *Security in Cyberspace*, June 5, 1996.

vices, for example, were often little more than crude anti-personnel bombs, consisting of a handful of roofing nails wrapped around a lump of plastic explosive, that were detonated simply by lighting a fuse. Time bombs from the same era were hardly more sophisticated. They typically were constructed from a few sticks of dynamite and commercial detonators stolen from construction sites or rock quarries attached to ordinary battery-powered alarm clocks. Neither device was terribly reliable and often put the bomber at considerable risk. The process of placing and actually lighting the first type of device carried with it the inherent potential to attract attention while affording the bomber little time to effect the attack and make good his or her escape. Although the second type of device was designed to mitigate precisely this danger, its timing and detonation mechanism was often so crude that accidental or premature explosions were not infrequent, thus causing some terrorists inadvertently to kill themselves.⁶⁵

In hopes of reducing these risks, the IRA's bomb makers invented a means of detonating bombs from a safe distance using model aircraft radio controls purchased at hobby shops. Scientists and engineers working in the British Ministry of Defence's (MoD) scientific research and development division in turn developed a system of electronic countermeasures and jamming techniques for the Army that effectively thwarted this means of attack.⁶⁶ However, rather than abandon the tactic completely, the IRA searched for a solution. In contrast to the state-of-the-art laboratories, huge budgets, and academic credentials of their government counterparts, the IRA's own R&D department toiled in cellars beneath cross-border safe houses and in the back rooms of urban tenements for five years before devising a network of sophisticated electronic switches for their bombs that would ignore or bypass the Army's electronic countermeasures.⁶⁷

⁶⁵David Rose, "Devices reveal IRA know-how," *The Guardian* (London), May 18, 1990.

⁶⁶Michael Smith, "IRA Use of Radar Guns in Bombings Described," *Daily Telegraph* (London), May 20, 1991.

⁶⁷Smith, 1991. See also David Hearst, "IRA mines gap in army security," *The Guardian* (London), April 10, 1990; David Hearst, "'Human bomb' fails to explode," *The Guardian* (London), November 24, 1990; Jamie Dettmer and Edward Gorman, "Seven dead in IRA 'human' bomb attacks," *The Times* (London), October 25, 1990; and Will Bennett, "Terrorists keep changing tactics to elude security forces," *Independent* (London), December 17, 1991.

Once again, the MoD scientists returned to their laboratories, emerging with a new system of electronic scanners able to detect radio emissions the moment the radio is switched on—and, critically, just tens of seconds before the bomber can actually transmit the detonation signal. The very short window of time provided by this early warning of impending attack was just sufficient to allow Army technicians to neutralize the transmission signal and render detonation impossible.

For a time, this proved effective, but the IRA has discovered a means to overcome even this countermeasure. Using radar detectors, such as those used by motorists to evade speed traps, in 1991 the group's bomb makers fabricated a detonating system that can be triggered by the same type of hand-held radar gun used by police throughout the world to catch speeding motorists. Since the radar gun can be aimed at its target before being switched on, and the signal that it transmits is nearly instantaneous, the detection and jamming of such signals are extremely challenging.⁶⁸

Finally, in the years before the 1994 IRA cease-fire, IRA units developed yet another means to detonate bombs using a photoflash "slave" unit that can be triggered from a distance of up to 800 meters by a flash of light. The device, which sells for between £60 and £70, is used by commercial photographers to produce simultaneous flashes during photo shoots. The IRA bombers can attach the unit to the detonating system on a bomb and activate it with a commercially available, ordinary flash gun.⁶⁹ The sophistication of this means of attack lies in its simplicity. Accordingly, those charged with defending against terrorism cannot discount the impact and consequences of even improvised weapons using relatively unsophisticated means of delivery, since the results can be equally as lethal and destructive.

⁶⁸Bennett, 1991.

⁶⁹Nicholas Watt, "IRA's 'Russian roulette' detonator," *The Times* (London), March 16, 1994; and, "Photoflash bomb threat to the public," *The Scotsman* (Edinburgh), March 16, 1994.

Implications for Antiterrorism and Force Protection

Although the technological mastery employed by the IRA may appear unique among terrorist organizations, experience has demonstrated repeatedly that, when confronted by new security measures, terrorists throughout the world will seek to identify and exploit new vulnerabilities, adjusting their means of attack accordingly.⁷⁰ This point is pertinent to the threat posed by terrorists to U.S. Air Force assets and personnel. The availability of a wide variety of weapons—from the most simple and basic to more sophisticated and technologically “cutting edge”—coupled with the terrorists’ operational ingenuity has enabled at least some groups to stay ahead of the counterterrorist technology curve and repeatedly frustrate or defeat the security measures placed in their path. Relying on unconventional adaptations or modifications to conventional explosive devices, these organizations have been able to develop innovative and devastatingly effective means to conceal, deliver, and detonate all kinds of bombs.

An important lesson, therefore, is not to disregard an adversary’s apparent lack of technological or operational sophistication and thereby be lulled into a false sense of security. In the context of terrorist attacks on Air Force assets, this has been demonstrated. In January 1981, a group of Puerto Rican terrorists penetrated the defenses surrounding the Muniz Air National Guard Base in Puerto Rico and, using simple explosive devices, destroyed eight A-7D fighters and one F-104 aircraft as well as damaging two other A-7Ds. Using relatively unsophisticated and comparatively inexpensive ordnance, they were able to inflict financial losses totaling more than \$45 million.⁷¹

⁷⁰As one high-ranking IRA terrorist explained, “You change your tactics to keep them guessing. It all depends on logistics. If you stick to one tactic, you can become predictable and be tracked down. They can find out when you work to a pattern.” Quoted in Will Bennett, 1991.

⁷¹See Alan Vick, *Snakes in the Eagle’s Nest: A History of Ground Attacks on Air Bases*, RAND, MR-553-AF, 1995, pp. 16, 154; and Bruce Hoffman, *Terrorism in the United States and the Potential Threat to Nuclear Facilities*, RAND, R-3351-DOE, January 1986, p. 9, and *Recent Trends and Future Prospects of Terrorism in the United States*, RAND, R-3618, May 1988, p. 42.

Moreover, even attacks that are not successful by conventional military measures can nonetheless still be a success for the terrorists provided that they are daring enough to garner media and public attention. Indeed, the terrorist group's fundamental organizational imperative to act—even if their action is not completely successful but brings them publicity—also drives their persistent search for new ways to overcome, circumvent, or defeat governmental security and countermeasures. Accordingly, attacks at all points along the conflict spectrum—from the crude and primitive to the most sophisticated—must be anticipated and appropriate measures employed to counter them.

CONCLUSION

Terrorists have targeted the United States more often than any other country.⁷² This phenomenon is attributable as much to the geographical scope and diversity of America's overseas commercial interests and the large number of its military bases on foreign soil as to the United States' stature as the lone remaining superpower. Terrorists are attracted to American interests and citizens abroad precisely because of the plethora of readily available targets; the symbolic value inherent in any blow struck against perceived U.S. "expansionism," "imperialism," or "economic exploitation"; and, not least, because of the unparalleled opportunities for exposure and publicity from the world's most extensive news media that any attack on an American target assures. The reasons why the United States is so appealing a target to terrorists suggest no immediate reversal of this attraction. Indeed, the animus of many of the most radical Middle Eastern terrorist groups coupled with that of the principal state sponsors of international terrorism⁷³—Iraq, Iran, Libya, Syria, North Korea, and the Sudan—suggests that the United States will remain a favored terrorist target. Accordingly, the U.S. Air Force, as an important vehicle of American overseas force projection and be-

⁷²Followed by Israel, France, Great Britain, West Germany, the former Soviet Union/Russia, Turkey, Cuba, Spain, and Iran. The RAND-St. Andrews Chronology of International Terrorism.

⁷³According to the U.S. Department of State's Office of the Coordinator for Counter-Terrorism. See U.S. Department of State, *Patterns of Global Terrorism, 1995*, Department of State Publication 10321, Washington, DC, April 1996, p. viii.

cause of the diverse range of targets it offers, will likely remain a focus of terrorist activity.

In terms of overall terrorism patterns and the future threat in general, the trends and developments examined here suggest three key conclusions.

First, we can expect little deviation from established patterns by mainstream terrorists belonging to traditional ethnic-separatist nationalist or ideologically motivated groups. They will largely continue to rely on the same two basic weapons that they have used successfully for more than a century: the gun and the bomb. Changes will occur in the realm of clever adaptations or modifications to existing off-the-shelf technology (as demonstrated by the IRA experience) or the continued utilization of readily available, commercially purchased materials that can be fabricated into crude—but lethally effective and damaging—weapons (such as the explosive devices used by the World Trade Center and Oklahoma City bombers, the IRA in its operations in England, and the bombers of U.S. embassies in Africa).

This adherence to a circumscribed set of tactics and limited arsenal of weapons will continue to be dictated by the operational conservatism inherent in the terrorists' organizational imperative to succeed. For this reason, traditional terrorists will always seek to remain just ahead of the counterterrorism technology curve: sufficiently adaptive to thwart or overcome the countermeasures placed in their path but commensurably modest in their goals (i.e., the amount of death and destruction inflicted) to ensure an operation's success. Traditional terrorist organizations will continue to be content to kill in the ones and twos and, at most, the tens and twenties, rather than embark on grandiose operations involving weapons of mass destruction (WMD) that carry with them the potential to kill on a much larger scale. Indeed, the pattern of definitively identified state-sponsored terrorist acts supports this argument. Despite the enhanced capabilities and additional resources brought to bear in these types of attacks through the assistance provided by radical governments and renegade regimes, without exception the terrorists' weapons have remained exclusively conventional (e.g., *not* involving chemical, biological, or nuclear agents) and have mostly conformed to long-established patterns of previous terrorist operations. In this respect,

rather than attacking a particularly well-protected target set or attempting high-risk/potentially high-payoff operations, terrorists will merely search out and exploit hitherto unidentified vulnerabilities in their more traditional target sets and simply adjust their plan of attack and tactical preferences accordingly. This conclusion suggests that it will be difficult to deter terrorists completely, as any security hurdles placed in their path will not stop them from striking, but likely only displace the threat onto a softer target(s).

Second, the sophistication of terrorist weapons will continue to be in their simplicity. Unlike military ordnance, such as plastic explosives, for example, the materials used in homemade bombs are both readily and commercially available: thus, they are perfectly legal to possess until actually concocted or assembled into a bomb. These ordinary materials are difficult for authorities to trace or for experts to obtain a "signature" from. For example, the type of explosive used in the 1988 in-flight bombing of Pan Am flight 103 was Semtex-H, a plastic explosive manufactured only in Czechoslovakia and sold during the Cold War primarily to other former-Warsaw Pact countries as well as to such well-known state sponsors of terrorism as Libya, Iran, Iraq, Syria, and North Korea. In comparison, the materials used in the World Trade Center bomb, as previously noted, had no such foreign government pedigree, were entirely legal to possess, and could be traced only to an ordinary New Jersey chemical supply company. Hence, for foreign governments seeking to commission terrorist attacks or use terrorists as surrogate warriors, growing expertise in the fabrication of homemade materials into devastatingly lethal devices carries distinct advantages. Above all, it may enable the state sponsor to avoid identification and thereby escape military retaliation or international sanction. Terrorists, accordingly, will continue to use what they know will work. Most will not likely feel driven to experimentation with unconventional weapons, believing that they can achieve their objectives using readily available and/or conventional weapons.

Third, combinations of new types of terrorist entities with different motivations and greater access to WMD may surface to produce new and deadlier adversaries. Terrorism today increasingly reflects such a potentially lethal mixture: it is frequently perpetrated by amateurs; motivated by religious enmity, blind rage, or a mix of idiosyncratic motivations; and in some instances is deliberately exploited or ma-

nipulated by professional terrorists and their state sponsors. In this respect, the increasing availability of high-tech weapons from former-Warsaw Pact arsenals and the proliferation of fissile materials from the former Soviet Union and other Eastern Bloc countries⁷⁴ coupled with the relative ease with which some chemical or biological warfare agents can be manufactured, suggest that terrorists possessing these characteristics—particularly those with religious, millennialist, or apocalyptic motivations—would be most likely to cross into the WMD domain. Their trajectory along this path could be facilitated by any of the developments discussed in this volume that may already have made the means and methods of WMD more available on the world market.

Indeed, the post-Cold War order and the attendant possibilities and payoffs of independence, sovereignty, and power may also entice both new and would-be nations in addition to the perpetually disenfranchised to embrace terrorism as a solution to, or vehicle for, the realization of their aspirations. As such, there will be both ample motives and possibly abundant opportunities for terrorists that could portend an even bloodier and more destructive era of violence.

⁷⁴Serious concerns have been raised about the evidently considerable security deficiencies and lax inventory and other control procedures that afflict the Russian nuclear archipelago—both military as well as civilian. It has been demonstrated that these once-lavishly funded facilities and their well-paid employees have languished in the post-Cold War era because of the often dire economic difficulties faced by Russia and the former-Soviet republics today. Accordingly, these same facilities are anemically funded, poorly managed, and beset with morale problems, creating the possibility of an illicit traffic in nuclear materials and accompanying black market in such goods that could be exploited or tapped into by terrorists, insurgents, revolutionaries, or other violent subnational entities.