

# mind•full: a brainsnack for future leaders with ethical appetites

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## terrorism & WMD

Fear that terrorists may acquire and use weapons of mass destruction (WMD) against the United States is gaining hold in the popular imagination. While experts argue over the likelihood that terrorists could amass the funds, materials, expertise, and organization needed to carry out such a threat, policy makers and emergency planners are increasingly hesitant to gamble on that fact because the stakes are so high.

Terrorist attacks have been on a downswing in recent years, but their deadliness is increasing. Some worry that the likelihood that terrorists may attempt a dramatic attack with a nuclear, chemical, biological, or radiological weapon may increase, as the more traditional political terrorists are being overshadowed by radical religious and quasi-religious nationalist groups and millenarian sects. The deadly sarin gas attack in the Tokyo subway, carried out by the Aum Shinrikyo sect may only be the beginning.

Despite these very real fears, however, most experts agree that prospects for a non-state group to develop a modern nuclear weapon are remote. Developing biological weapons capable of killing mass numbers of people also is extremely difficult. Chemical or radiological attacks are perhaps more likely. There are steps that can be taken to reduce the likelihood of such an attack, some of which are underway. There are also ways to limit the effects and respond in the event of attack. However, civil libertarians worry that the level of government intrusiveness into citizens' lives may be too great a price to pay for increased vigilance against the remote, but frightening, possibility of an attack using weapons of mass destruction.

The mission of Student Pugwash USA is to promote the socially responsible application of science and technology in the 21st century. As a student organization, Student Pugwash USA encourages young people to examine the ethical, social, and global implications of science and technology, and to make these concerns a guiding focus of their academic and professional endeavors.

The **mind•full** series encourages readers to explore crucial ethical dilemmas associated with the application of science and technology.

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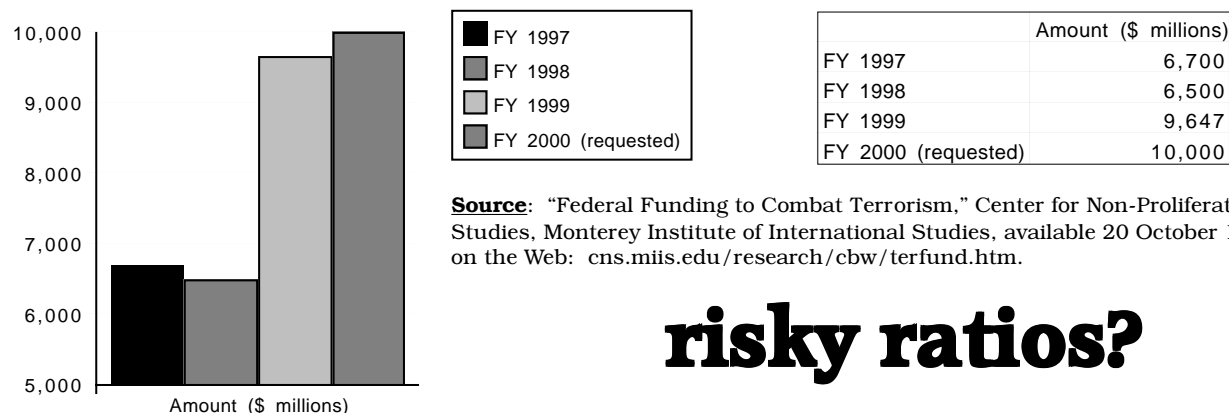
## go figure!

According to the State Department's annual report, *Patterns of Global Terrorism: 1998*, there were 273 international terrorist attacks in 1998, the lowest number since 1971. And yet, the casualties were the highest ever recorded: 741 dead and 5,952 wounded, mostly due to the bombings at US embassies in Kenya and Tanzania. Over 40 percent of the 1998 attacks were against US targets. However, North America remains relatively insulated, with only a small fraction of attacks in recent years happening on this continent.

How likely is it that a terrorist group could use weapons of mass destruction to kill large numbers of people? One study by the Monterey Institute of International Studies indicates that only 71 terrorist attacks between 1900 and May 1999 included the use of chemical or biological agents. In those attacks, 123 people were killed and 3,744 injured. One-third of the attacks were perpetrated by religiously motivated groups. The only US fatality was in 1973. In only a few cases did the perpetrators try to kill more than 1,000 people, but they never succeeded.

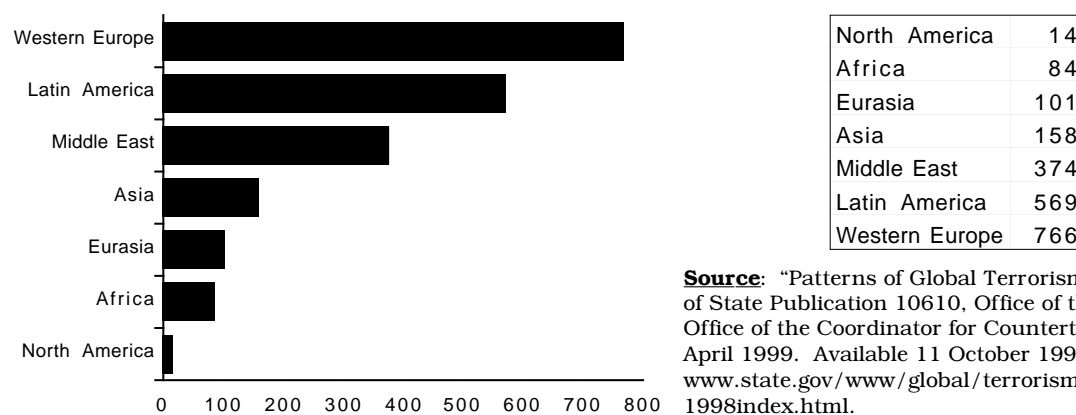
However, US legislators are concerned. The fiscal year 2000 budget includes over \$8.5 billion for combatting terrorism. Critics argue that many of these programs are meant to revive the military after the post-Cold War slump. Others debate how much of this money should go into prevention versus military response.

### federal funding to combat terrorism



## risky ratios?

### total international attacks by region, 1993 - 1998



# in control or out of it ?

Efforts to prevent and combat the possibility of a terrorist attack involving WMD are gaining increasing local, national, and international attention. Local and regional leaders are beginning to focus on the means of first response to a possible attack. The training and equipping of civilian fire and police departments, medical personnel, and other emergency workers will determine whether such an attack is properly identified early enough to limit its effects. A Domestic Preparedness Program, led by the Department of Defense, was set up in 1997 to oversee the training of these "first responders" in 120 cities. In October 1998, the government reshuffled this structure and established the National Domestic Preparedness Office, housed in the FBI, to be a central point of contact and coordination.

On a national level, the United States has taken several steps. On May 22, 1998, President Clinton signed Presidential Decision Directive 62, the Combatting Terrorism Directive, which established a national coordinator for security, infrastructure protection, and counter-terrorism. He also released PDD 63, the Critical Infrastructure Protection Directive, which sets a goal of having a reliable, secure, interconnected information system by the year 2003 and establishes various offices and committees to oversee this program. In April 1999, the Department of Defense—as directed by Congress in the Defense Against Weapons of Mass Destruction Act of 1998—set up a new Weapons of Mass Destruction Advisory Panel, headed by Virginia Governor James Gilmore (R). The panel will submit four reports during its three-year tenure, and will assess federal efforts to enhance domestic preparedness for terrorist weapons of mass destruction incidents.

Internationally, there are several important treaties which limit the likelihood that a terrorist group might have access to technologies and materials needed to develop weapons of mass destruction. Treaties such as the nuclear Non-Proliferation Treaty, the Chemical Weapons Convention, and the Biological Weapons Convention are currently in force and contain means for inspections and verification that help to ensure against theft or misuse of materials. Other intergovernmental agreements also help, such as the Missile Technology Control Regime, the Australia Group (which harmonizes export controls on equipment

## learn the lingo

**combatting terrorism\***-Actions, including antiterrorism (defensive measures taken to reduce vulnerability to terrorist acts) and counterterrorism (offensive measures taken to prevent, deter, and respond to terrorism), taken to oppose terrorism throughout the entire threat spectrum

**counterproliferation\*\***-[R]efers to the activities of the Department of Defense across the full range of US efforts to combat proliferation, including diplomacy, arms control, export controls, and intelligence collection and analyses, with particular responsibility for assuring that US forces and interests can be protected should they confront an adversary armed with weapons of mass destruction or missiles.

**terrorism\***-The calculated use of violence or the threat of violence to attain goals that are political, religious, or ideological in nature. This can be done through intimidation, coercion, or instilling fear. Terrorism includes a criminal act against persons or property that is intended to influence an audience beyond the immediate victims.

**weapons of mass destruction\*\***-Weapons that cause indiscriminate, widespread destruction. Such weapons include nuclear, biological, and chemical weapons in any form, and associated delivery systems. These three types of weapons are also referred to as NBC weapons.

**Source:** "Dictionary of Small Scale Contingency/ Operations Other Than War Terms," a compilation of military definitions from several sources, found on the Web October 11, 1999 at [www.msosa.dmsa.mil/oow\\_documents/sscdictionary/index.htm](http://www.msosa.dmsa.mil/oow_documents/sscdictionary/index.htm). Definitions are from Joint Pub 1-02, DoD Dictionary of Terms (\*) and USAF Counterproliferation Master Plan (\*\*).

and material used in chemical and biological weapons), and others. In May 1998, the US and the European Union issued a Statement of Shared Objectives and Close Cooperation on Counterterrorism. More recently, in September 1999, Canada and Russia called for a special G8 Summit on Terrorism.

However, there are still many problems to overcome. Deteriorating conditions in the former Soviet Union lead many to fear that terrorists may be able to purchase enough highly enriched uranium on the black market to make a crude nuclear device. Some worry that former Soviet scientists may place money over morals and go to work for terrorist groups. And it is possible that with enough funding a group might be able to piece together an effective program in the future, despite the limited success of the Aum Shinrikyo group with its cache of over \$1 billion.

In the US, the Department of Defense has established a counterproliferation program, to provide a military response in the case of the failure of diplomacy or other measures to prevent proliferation. US doctrine now allows for a possible nuclear response in the event of the use of chemical or biological weapons. It is unclear, however, what effect these plans might have against a geographically diverse terrorist organization.

## **unconventional weapons**

### **feather bombs and food**

The threat of potential biological warfare against crops is often overlooked. Several countries, including France, Britain, Germany, Japan, and the US, explored the possibility of creating pathogens to attack staple foods prior to the entry into force of the Biological Weapons Convention. Russia and Iraq reportedly had anticrop programs as late as 1991. One US delivery vehicle included the use of "feather bombs," in which turkey feathers carrying disease spores were released over a crop field.

Experts worry that a terrorist group could kill as many people with anticrop warfare as with a nuclear weapon. They point to disasters like the Irish potato famine of 1845 - 1846 that killed over a million people or the Bengal famine in India in 1942 - 1943, in which more than 2 million people starved, for examples of what might occur if such an attack were to take place in a poorer nation.

### **netwar and cyberterror**

As terrorism enters the information age, new dangers may emerge. Network-based conflict and crime, according to one RAND study, are likely to become "major phenomena" in future decades. In addition, as terrorist groups rely more heavily on the Internet to coordinate and carry out their missions, new non-state actors can gain prominence. And as these groups become more proficient in using the Internet for decision making and networking, they will be more likely to use the technology offensively.

One possible mode of attack may come in "swarming," where dispersed nodes of a network converge on a target from many directions with a pulse that rapidly redisperses and recombines for a new pulse. Techno-terrorism may include the use of satellites, email, and the Web. "Cybotage"—acts of disruption and destruction against information infrastructures—may become the new terrorist buzzword.

# (anything but a) conclusion

While there is undoubtedly a danger that terrorists may seek to acquire, and perhaps use, weapons of mass destruction, it is important that leaders and the public understand the true nature of the risk and the limits of our ability to defend ourselves. There are no sure technological fixes to these problems. In the meantime, as a democratic society relatively safe from attacks within its borders, the United States will continue to grapple with difficult choices in balancing personal freedoms with the need to protect the societal good. International cooperation and treaties that establish an international norm remain the cornerstone of efforts to combat terrorist attempts to use weapons of mass destruction.

## How do **you** answer the **tough questions**



The US recently bombed a factory in Sudan that it suspected housed a chemical weapons production plant claimed to be linked to Osama bin Laden. It was later widely determined to be a medicine factory. Do you think the US had the right to bomb a suspected terrorist site in a sovereign nation? Why or why not?

What rights do suspected terrorists have? Do you think it is important for the government to be able to tap their phones and other electronic communications? What steps can we take to ensure that suspected terrorists are treated fairly? What can we learn from the case of Richard Jewell, who was accused of the Atlanta Olympic bombing and who was later cleared after much adverse publicity?



Does the US bear any special post-Cold War responsibility to help Russia and other former Soviet countries to maintain adequate controls over fissile materials? For example, one analyst suggests we help pay the salaries of border guards as a way to make them less susceptible to bribes from people trying to smuggle out materials via the black market. Do you agree? Why or why not?

There is a debate currently underway about whether or not the last known samples of the smallpox virus should be destroyed. Some argue that if we destroy the virus and secret caches of it exist, we will not be able to develop antiviral drugs and more effective vaccines against the threat of a possible terrorist attack. What would you do, if it were your decision?



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• Do you think local, state, and federal agencies should spend money on equipment and training to respond to a chemical or biological attack, even if the chance is very remote that they will ever need to use the equipment? Why or why not? What if resources are very limited and this funding needs to come from some other part of the budget?

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Some 220 US troops are openly refusing to receive an anthrax vaccine, because they are worried about possible adverse reactions. They face expulsion from the military for refusing the shots. Do you think the Pentagon has the right to require soldiers to take this vaccine? Why or why not?

How good a job do you think the media is doing in presenting issues to the public about terrorism and weapons of mass destruction? What about Hollywood?



If a terrorist group were to successfully release a biological agent in a major US city, killing hundreds or thousands of people, how do you think the US should respond? If it were your decision, would you authorize the use of a nuclear weapon in response? What if it were unclear where the group was headquartered? Would you attack a country known to be friendly to the group? What could you do to create an international environment where that would never happen again?

Do you think materials should be available on the Web that might provide terrorists with information on how to build chemical, biological, or nuclear bombs? What, if any, limits do you think there should be on this material? How do you balance this with freedom of speech issues?



Due to prior terrorist incidents, it is now commonplace for you and your luggage to go through x-ray machines at airports. A few decades ago this level of intrusiveness into your personal life would have been unthinkable. Are there other such examples of ways you would be willing to give up some personal freedom for greater security against deadly terrorist threats, or do you think that we have already gone too far as a society?

**Terrific Tomes**

- *Biohazard*, Ken Alibek with Stephen Handelman—written by a former Russian biological weapons scientist. New York: Random House, 1999.
- "Bioterrorism: America's Newest War Game," Peter Pringle—debates the arguments in the Deutch, Carter, Zelikow *Foreign Affairs* article. *The Nation*, December 28, 1998. Available online: [www.thenation.com/1998/issue/981109/1109PRIN.HTM](http://www.thenation.com/1998/issue/981109/1109PRIN.HTM).
- "Biological Warfare Against Crops," Paul Rogers, Simon Whitby, and Malcom Dando—*Scientific American*, Volume 280, Number 6, June 1999, pp. 70 - 75.
- "The Bioweaponers," Richard Preston—accessible article about the scientists who worked in Russia's biological weapons program. *The New Yorker*, March 9, 1998.
- *Biological Weapons: Limiting the Threat*, Joshua Lederberg (editor)—many of these essays were originally published in the *Journal of the American Medical Association*. BCSIA Studies in International Security, MIT Press, 1999.
- "Catastrophic Terrorism," John Deutch, Ashton Carter, and Philip Zelikow—*Foreign Affairs*, Vol. 77, No. 6, November / December 1998, pp. 80 - 94.
- *Countering the New Terrorism*, Ian O. Lesser, et al.—A RAND/Project Air Force study, includes chapter on netwar and information-age terrorism. Santa Monica, California: RAND, 1999. Available online: [www.rand.org](http://www.rand.org).
- "The Great Superterrorism Scare," Ehud Sprinzak—*Foreign Policy*, Fall 1998.
- *Journal of the American Medical Association*—edition devoted to biological weapons. Volume 27, Number 5, August 6, 1997. Contents and abstract available at: [www.ama-assn.org/sci-pubs/journals/archive/jama/vol\\_27/no\\_5/toc.htm](http://www.ama-assn.org/sci-pubs/journals/archive/jama/vol_27/no_5/toc.htm).
- *The New Terrorism: Fanaticism and the Arms of Mass Destruction*, Walter Laqueur—provides a look at how terrorism has evolved over the years and poses questions for the future. New York: Oxford University Press, 1999.
- *Patterns of Global Terrorism: 1998*—State Department publication with stats, available on the Web at: [www.state.gov/www/global/terrorism/1998Report/1998index.html](http://www.state.gov/www/global/terrorism/1998Report/1998index.html).
- *Terrorism and Political Violence*—an academic journal which also publishes the RAND Chronology of International Terrorism. Table of contents and abstracts online at: [www.frankcass.com/jnls/tpv.htm](http://www.frankcass.com/jnls/tpv.htm).
- *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons*, Jonathan B. Tucker, ed.—comparative case studies of CBW terrorist incidents. MIT Press, 1999 (forthcoming this fall).
- *The Ultimate Terrorists*, Jessica Stern—excellent, balanced book by a former National Security Council staff member about the likelihood of terrorists using WMD in the post-Cold War world.
- "An Unlikely Threat," Jonathan B. Tucker and Amy Sands—recent article that explores the Monterey study on the real threat to the US of a terrorist attack involving WMD. *The Bulletin of the Atomic Scientists*, Volume 54, Number 4, July / August 1999, pp. 46 - 52. Available on the Web at: [www.bullatomsci.org/issues/1999/ja99/ja99tucker.html](http://www.bullatomsci.org/issues/1999/ja99/ja99tucker.html).

**check it out !****Mass Terror**

- *The Cobra Event*, Richard Preston—A bioterrorism thriller set in New York City! New York, Random House, 1997.
- *The Peacemaker*—Hollywood's 1997 version of Jessica Stern's old job! George Clooney and Nicole Kidman save New York City from a nuclear terrorist threat involving stolen Russian weapons and Balkan unrest.
- *Rainbow Six*, Tom Clancy—Eco-freaks who plan to use a biological agent to create a new world face off against high-tech international counterterrorist team. Go Clancy! Paperback. New York: Berkeley Books, 1998.

**cyberspace****top picks**

• Stimson Center (great resources, includes texts of public laws and info on CBW agents)—[www.stimson.org/cwc/index.html](http://www.stimson.org/cwc/index.html)

• Terrorism Research Center (industry perspectives, includes sections on information warfare)—[www.terrorism.com](http://www.terrorism.com)

**www.net.threat****best of the rest**

- Anthrax Vaccine Immunization Program (DOD's site for this controversial program)—[www.anthrax.osd.mil](http://www.anthrax.osd.mil)
- Carnegie Endowment for International Peace (includes Congressional testimonies)—[www.ceip.org](http://www.ceip.org)
- Center for Democracy and Technology (explores civil liberties issues)—[www.cdt.org/policy/terrorism/](http://www.cdt.org/policy/terrorism/)
- Center for Nonproliferation Studies, Monterey Institute of International Studies (fantastic site, with detailed chart of federal funding)—[cns.miis.edu/research/cbw/index.htm](http://cns.miis.edu/research/cbw/index.htm)
- Department of Defense—[www.defenselink.mil](http://www.defenselink.mil)
- Disaster Center (great links!)—[www.disastercenter.com/terror.htm](http://www.disastercenter.com/terror.htm)
- Federal Emergency Management Agency (FEMA)—[www.fema.gov/library/terror.htm](http://www.fema.gov/library/terror.htm)
- Federation of American Scientists—[www.fas.org/bwc/](http://www.fas.org/bwc/)
- Harvard Sussex Program on Chemical and Biological Warfare Armament and Arms Limitation (international program, convenes the Pugwash Study Group on CBW!)—[www.fas.harvard.edu/~hsp/about.html](http://www.fas.harvard.edu/~hsp/about.html)
- Mitretek (lots of information about terrorism, WMD, and environmental issues)—[www.mitretek.org/mission/envene/nbc.html](http://www.mitretek.org/mission/envene/nbc.html)
- NBC Industry Group (association of organizations supporting NBC defense)—[www.nbcindustrygroup.com](http://www.nbcindustrygroup.com)
- SIPRI/Bradford CBW Project (facts galore!)—[www.sipri.se/cbw/cbw-sipri-bradford.html](http://www.sipri.se/cbw/cbw-sipri-bradford.html)
- State Department, Coordinator for Counterterrorism—[www.state.gov/www/global/terrorism/](http://www.state.gov/www/global/terrorism/)
- Terrorist Group Profiles (from State Department's Annual Report)—[web.nps.navy.mil/~library/tgp/tgpndx.htm](http://web.nps.navy.mil/~library/tgp/tgpndx.htm)
- US Mission to the UN (great links to government sites on terrorism and WMD)—[www.un.int/usa/polsec.htm](http://www.un.int/usa/polsec.htm)

This **mind•full** was written by Sandra J. Ionno, executive director of Student Pugwash USA. Special thanks to Jason Pate, senior research associate, Chemical and Biological Weapons Nonproliferation Project, Monterey Institute of International Studies, for his comments. Any errors are the responsibility of Student Pugwash USA. ©1999 Student Pugwash USA.

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