

Stopping Nuclear Terrorism

The Dangerous Allure of a Perfect Defense

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Summary: Nuclear terrorism poses a grave threat to global security, but seeking silver bullets to counter it does not make sense. Instead of pursuing a perfect defense, U.S. policymakers should create an integrated defensive system that takes advantage of the terrorists' weaknesses and disrupts their plots at every stage, thereby chipping away at their overall chances of success.

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A successful nuclear attack by terrorists would be catastrophic. Intense fears of nuclear terrorism have led to a search for a perfect defense: destroying all terrorist groups that threaten the United States, sealing U.S. borders against loose nukes, or locking up all existing nuclear weapons and materials. Yet none of these strategies is a silver bullet. It is fantasy to believe that terrorism can be eliminated or that thousands of miles of U.S. borders -- not to mention the borders of U.S. allies -- can be sealed. Initiatives to secure nuclear weapons and materials are vital, but they will always fall short, too.

Rather than search for a perfect defense, which will never exist, counterterrorism strategists must use the many imperfect tools at their disposal to confront the many imperfect terrorist groups that they face. To pull off a nuclear attack, a group would need to acquire nuclear materials or a weapon, build a bomb or unlock an existing one, move that weapon to its target, and detonate it. Securing nuclear weapons and materials, although critical, confronts only one part of a plot and cannot eliminate the threat entirely. Strategists must build on this one defense to develop an integrated defensive system that also draws on border security, law enforcement, intelligence operations, military and diplomatic initiatives, and emergency response efforts. To do so properly, they must develop a more realistic picture of nuclear terrorism that draws on a careful understanding of how terrorist groups work and how their plots can fail.

FIGHTING A MIRAGE

When strategies for preventing nuclear terrorism rely on silver bullets, less dramatic -- but nonetheless crucial -- measures are neglected. The search for a perfect defense is partly driven by outsized fears of terrorists' capabilities and the assumption that a worst-case, or "perfect storm," scenario will occur. But terrorists do not have superhuman powers; their plots are imperfect and contingent and can be derailed. Consider the analogy of a police department seeking to prevent bank robberies. If the department assumes that all thieves have cars that travel 200 miles per hour, the department will give up on planning carefully for car chases and focus almost entirely on guarding the banks. If it instead realizes that many thieves will have cars that travel only 100 miles per hour, it will also carefully develop tactics for chasing down robbers. Realistically assessing the full spectrum of possible threats -- in this case, from Ferraris to Ford Escorts -- spurs broader and more careful planning by the police department. The same would be true of the U.S. government's homeland security and counterterrorism policies if Washington adopted a more nuanced view of the nuclear terrorist threat.

Moving away from worst-case assessments of the capabilities of nuclear terrorists will require strategists to rethink many basic assumptions. Terrorist groups are limited in their capabilities. Some terrorist groups, for example, lack expert personnel but have extensive resources. Analysts generally assume that wealthy groups will use their resources, whether money or connections, to recruit the right people. But the case of Aum Shinrikyo, an apocalyptic Japanese cult, reveals that this logic is not always correct. The cult was both wealthy and well connected in the Russian bioweapons world, but it decided that expanding its circle of experts would threaten

its cover and failed to pull off a successful anthrax attack. Defenses that might work against groups with limited capabilities should not be dismissed, even if they are likely to fail against others.

Terrorist groups also make mistakes. In the typical portrait of nuclear terrorists, if they see an opportunity to succeed, they will manage to seize it. But things do not always go as planned. A group skilled enough to acquire a nuclear weapon will not, for example, necessarily succeed in the simpler task of hiding it from authorities. In June 2007, a group of highly educated Britons attempted to build and detonate two car bombs in London. They succeeded in building the bombs, but their education and intelligence did not stop them from leaving their cars in a no-parking zone, a seemingly avoidable mistake that led to their capture. It is impossible to predict where groups will err, but defenses should be devised so that they are ready to exploit the mistakes that terrorists will almost inevitably make.

Another common misperception is that apocalyptic terrorist groups care little about risk or failure. Flashes of creativity, such as al Qaeda's use of airliners as missiles, have convinced many observers that such groups are invariably nimble and innovative. But many ambitious and successful terrorist groups are conservative and averse to failure -- and thus stick to bread-and-butter tactics whenever possible, even when a new approach seems promising. Although 9/11 has convinced many that al Qaeda is innovative, it also provides evidence for the opposite conclusion: the group used battle-tested techniques for financing and travel. Defensive measures that target the most obvious terrorist tactics should not be dismissed simply because analysts can dream up ways in which those measures might theoretically be evaded.

It would be wrong and dangerous to replace a hysterical overestimation of terrorists' capabilities with an excessively optimistic underestimation. But a realistic assessment of the full range of terrorist capabilities would encourage counterterrorism strategists to abandon demands for a panacea and instead adopt defenses that effectively targeted a wide spectrum of terrorists' weaknesses. Such an approach is sorely needed, because even the best hope for a silver bullet against nuclear terrorism -- locking down all nuclear weapons and materials -- will always fall short.

THE LOCKDOWN FALLACY

The argument for a defense based on nuclear lockdown is simple. Nuclear weapons require either highly enriched uranium or plutonium. These materials do not occur naturally, cannot be produced by terrorist groups, and are found at only a small number of sites worldwide. In theory, therefore, governments can prevent nuclear terrorism by locking up the world's dangerous nuclear supplies and stopping new states from acquiring their own. In reality, unfortunately, it is not so simple. Much of the world's nuclear material is used regularly in military and civilian activities, which means it cannot literally be locked up -- there are many people authorized to handle and transfer it who might also have the opportunity to divert it for nefarious uses. It is also difficult to stop every state from acquiring nuclear weapons or to persuade states to disarm once they have joined the nuclear club. Many observers believe that Iran will eventually acquire a nuclear bomb, and there is no guarantee that North Korea will give up its entire arsenal. Nor is it safe to assume that these states can -- or want to -- keep their nuclear materials out of terrorists' hands. Efforts to lock down nuclear materials and stem proliferation will sharply lower these risks -- and should be pursued more vigorously than they currently are -- but they will never produce absolute security. It is thus crucial to develop a defense that also attacks the remaining dimensions of nuclear terrorism.

Approaching the problem from multiple angles would sharply reduce the likelihood of an attack. A terrorist group trying to pull off an attack might need to, among many other things, recruit trained scientists and engineers, acquire nuclear materials on the black market, purchase nonnuclear weapons components, and smuggle a bomb across borders. Each of these elements may seem manageable on its own. But taken together they can look much more daunting. Even a group that has an 80 percent chance of successfully carrying out each of these four steps has at best a 40 percent chance of completing the whole process and mounting a successful attack. Accordingly, chipping away at a group's odds of success at each stage of its plan -- in this case

by creating programs to ensnare rogue nuclear scientists, increasing the frequency of sting operations in the market for nuclear materials, monitoring terrorist finances to spot purchases of nonnuclear components, and installing radiation detectors at border crossings -- would have a strong combined effect. If each of these changes shaved a mere 25 percent off the odds of success at each of those four stages of a terrorist plot, that would lower the chances of a successful plot to 10 percent -- and perhaps convince some terrorists to abandon their ambitions.

SQUEEZE PLAY

But a defense conceived of as a sequence of hurdles -- what analysts call a layered defense -- is only the beginning. Each defensive element has two purposes: to defeat terrorist plots and to force terrorist groups to alter their plans in ways that introduce new vulnerabilities for them. Forcing terrorist groups to adapt in ways that expose new weaknesses is the key to an integrated approach to counterterrorism. Just as a triathlete who overexerts himself in the water ends up struggling during the subsequent bicycle race, a terrorist group that pours its resources into acquiring a nuclear weapon may have a tougher time moving that bomb to its target. Counterterrorism strategists must see themselves as the racecourse designers: if they want to slow down the racer during the bike leg, they can make the swim more difficult. By making the run harder, they can force the triathlete to take the bike leg slowly in anticipation. Likewise, if terrorist groups must make sacrifices in one part of their plot in order to enhance their chances of success in another, an approach that squeezes them from every side will substantially reduce their ability to evade defenses -- or their willingness to even try.

Such an approach might have helped foil the 9/11 attack. By deciding to fly hijacked airliners into buildings rather than blow up airplanes -- as it had plotted to do in an attack over the Pacific in the mid-1990s -- al Qaeda bypassed the challenge of smuggling explosives past airport security. On the other hand, it had to send operatives to flight school, which increased its exposure. Bomb detectors at airports forced the 9/11 plotters to improvise and adopt tactics that differed sharply from those historically used by hijackers. If the bomb detectors had been complemented by more careful monitoring of flight schools (as an ignored FBI memo recommended), the plot could easily have unraveled.

An integrated defense would similarly squeeze nuclear terrorists. Consider a terrorist group based in the Middle East that is attempting to acquire fissionable material for a nuclear weapon. The group first considers stealing highly enriched uranium from a well-guarded facility in Russia by cooperating with disgruntled workers there. It judges that some workers will be susceptible to bribery but fears exposure due to the high level of security. Abandoning this plan, the group then considers attacking the facility directly. But the prospect of a rapid law enforcement response discourages it. As a last resort, the group looks to the black market, but there it faces the risk of a government-run sting operation. This forces the group to either improvise yet again, and expose itself to new risks, or abandon its plot altogether. In this particular case, strong security for nuclear materials would drive terrorists into the hands of black-market sting operations, and the threat of sting operations would send terrorists back to face guards at the nuclear facility's gates.

SECURING THE BORDERS?

This way of thinking -- looking at counterterrorism as an integrated system contending with imperfect terrorists -- is particularly illuminating when it comes to border security. Analysts and politicians frequently point out that nuclear terrorists are likely to seek weapons-grade uranium metal because it is relatively easy to use in bombs and shielding it with lead or other substances can conceal it from even the best radiation detectors that the United States could install at its ports -- and hence conclude that efforts to improve port security will be ineffective. But this conclusion is not a sound foundation for defensive planning. Faced with stronger controls over nuclear materials, a terrorist group may decide to exploit any opportunity to acquire nuclear weapons or materials that comes its way -- and that may involve material that requires heavier or more unusual shielding to hide its radiation or entire weapons that are more conspicuous simply by dint of their weight or size. If counterterrorism strategists focused equally on these lesser but still important threats, they could design

cheaper and quicker approaches to scanning incoming cargo that would allow authorities to start effectively screening a much larger number of shipping containers arriving at U.S. ports. Port security may not be particularly useful on its own -- and it is still likely to be ineffective against many threats -- but when properly focused and combined with materials security, it can reduce the likelihood of a terrorist attack.

Such an integrated strategy would also introduce new problems for terrorists trying to smuggle nuclear material across the United States' porous borders. The case of Gazi Ibrahim Abu Mezer is illuminating. Abu Mezer entered the United States along a remote stretch of the U.S.-Canadian border as part of a plot to bomb subway tunnels in Brooklyn. He tried to do this twice, but each time he was caught and sent back. He was stopped again on his third try, but that time the U.S. Border Patrol allowed him into the United States. (The same pattern of trial and error is common with illegal immigrants on the U.S.-Mexican border.) If border guards both recognized such patterns and were equipped with simple radiation detectors, a future Abu Mezer carrying nuclear material would instead be detained.

The potential for materials and weapons security to work in concert with border controls runs even deeper. Tripling the number of guards at a nuclear facility may not stop determined terrorists from getting nuclear materials, but it would sharply reduce their chances of escaping unnoticed -- and if nuclear thefts were reported promptly, border security could be stepped up. Strategists who expect nuclear lockdown to do the job by itself will be caught unprepared if that strategy fails, but pursuing both approaches simultaneously could foil a plot. Indeed, border security -- and many other tools -- can be much more useful than is often assumed when it is combined with materials and weapons security as part of a broader integrated defense.

A NEW STRATEGY

An integrated approach to defending the United States against nuclear terrorism will require institutional and bureaucratic changes. As part of a move toward a more coherent and well-grounded homeland security and counterterrorism policy, U.S. officials must mandate a new strategic intelligence assessment of the nuclear threat. This assessment should combine expertise on nuclear weapons with expertise on terrorism, disciplines that, according to the final report of the president's Weapons of Mass Destruction Commission (released in 2005), have often failed to work together. Moreover, since so many ideas about nuclear terrorism are deeply ingrained, the effort must include analysts who have never studied nuclear terrorism in the past and can therefore bring fresh ideas to the table. Rather than focusing narrowly on the United States' vulnerabilities, this assessment should also catalogue opportunities for exploiting terrorists' weak points in order to derail and deter nuclear plots.

That intelligence assessment should form the foundation for ongoing "red team" exercises, in which the government tasks certain individuals with defeating and exposing holes in existing defenses. Red-teaming tests the ability of defensive planners to counter threats that they might otherwise ignore or fail to anticipate. Such exercises must not emphasize the most dramatic threats while ignoring lesser ones. When governments test defenses by trying to defeat them by any means possible, they implicitly emphasize worst-case scenarios. Although this is a necessary tool for auditing counterterrorism efforts, it is misleading when used by itself. Government Accountability Office red-teaming tests of U.S. border security, for example, have found important holes in U.S. defenses. But they have also obscured the potential of many defensive strategies that could target lesser but still realistic threats. In so doing, they have convinced many members of Congress that those strategies are largely useless.

Active efforts to integrate defenses are also essential. But many of the tools needed for fighting nuclear terrorism are not nuclear-specific: instead, they span the full range of homeland security and counterterrorism. That makes it impossible to cordon off nuclear terrorism and appoint a single powerful official to fully orchestrate a strategy against it. Multiple attempts to do so have sparked turf wars and failed. An effort to create a national domestic nuclear defense office in the White House in 2004 ran into insurmountable bureaucratic resistance; the new National Counterproliferation Center, housed in the Office of the Director of National

Intelligence, is barred from coordinating efforts to secure nuclear weapons and materials so as to prevent it from stepping on the Department of Energy's toes; and the National Counterterrorism Center, also in the ODNI and perhaps the likeliest candidate for lead coordinator, faces sharp limits on its power to mandate action.

Still, coordination on a narrower scale is essential and feasible. The recently established Domestic Nuclear Detection Office, located in the Department of Homeland Security, already plays a useful if limited role in coordinating nuclear detection efforts. The Global Initiative to Combat Nuclear Terrorism provides a forum for international discussion on aligning counterterrorism efforts. A lead senior official reporting directly to the president should be appointed to coordinate nuclear-specific elements of a defense. That official should also contribute to broader counterterrorism and homeland security planning. Meanwhile, the National Counterterrorism Center must create a strategic operational plan, as it did for combating terrorist travel. This would allow each branch of the government to evaluate its efforts not in isolation but in the context of a broader defense.

U.S. policymakers will also need to carefully reassess their approach to secrecy. For example, many of those on the frontlines of the war against terrorism are local law enforcement officers who do not have high-level security clearances. Joint counterterrorism task forces have been established, and their members have better access to information, but these groups are relatively small and typically operate in response to intelligence about a specific plot. Empowering beat cops to spot telltale signs of a nuclear plot in the course of their normal activities may require sharing more information about nuclear terrorism with them. There are, of course, dangers involved in sharing secrets, but a careful reassessment of secrecy policies is long overdue.

Predicting the threat of a nuclear terrorist attack is far from an exact science, and the consequences of writing off such a threat could be dire. But overestimating terrorist capabilities and dismissing certain defensive tools because they are imperfect is dangerous, too. The United States' strategy to combat nuclear terrorism must strike a balance between these two extremes. Staging a nuclear attack is harder than most people think, and strategists and policymakers must adopt a more realistic and nuanced assessment of the threat they face. Ratcheting down the threat assessment in this way should actually spur them to do more, not less. Terrorist groups can be vulnerable at any stage of their plots, and attacking each of these vulnerabilities presents an opportunity for counterterrorism officials to tighten the screws.