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The ongoing failure of imagination

Prior to 9/11, most Americans found the idea that international terrorists could mount an attack on their homeland and kill thousands of innocent citizens not just unlikely, but inconceivable. Psychologically, Americans imagined that they lived in a security bubble. Terrorist attacks, including those on U.S. embassies in Tanzania and Kenya, occurred elsewhere. These beliefs were reinforced by the conventional wisdom among terrorism experts, who argued that terrorists sought not mass casualties but rather mass sympathy through limited attacks that called attention to their cause.

As we approach the fifth year without a second successful terrorist attack upon U.S. soil, a chorus of skeptics now suggests that 9/11 was a 100-year flood. They conveniently forget the deadly explosions in Bali, Madrid, London, and Mumbai, and dismiss scores of attacks planned against the United States and others that have been disrupted. [1] The idea that terrorists are currently preparing even more deadly assaults seems as far-fetched to them as the possibility of

terrorists crashing passenger jets into the World Trade Center did before that fateful Tuesday morning.

As one attempts to assess where we now stand, and what the risks are, the major conclusion of the bipartisan 9/11 Commission deserves repetition: The principal failure to act to prevent the September 11 attack was a "failure of imagination." [2] A similar failure of imagination leads many today to discount the risk of a nuclear 9/11.

How great a risk? Risk equals probability times consequences. During the Cold War, strategists understood that even the slight possibility of a nuclear war that could kill every American made it imperative to do everything possible to avoid nuclear conflict. Similarly, the magnitude of the consequences of even a single nuclear bomb exploding in just one U.S. city swamps differences in judgments about the likelihood of such an attack. A terrorist armed with one nuclear bomb could murder a million people--killing in one day twice as many American souls as died in both World Wars combined.

On a normal workday, half a million people crowd the area within a half-mile radius of New York City's Times Square. If terrorists detonated a 10-kiloton nuclear weapon in the heart of midtown Manhattan, the blast would kill them all instantly. Hundreds of thousands of others would die from collapsing buildings, fire, and fallout in the hours and days thereafter.

The blast would instantly vaporize Times Square, Grand Central Terminal, and every other structure within half a mile of the point of detonation. Buildings three-quarters of a mile from ground zero would be fractured husks.

Lest this seem too hypothetical, recall an actual incident that occurred in New York City one month to the day after the 9/11 attacks on the World Trade Center and Pentagon. A CIA agent, code-named Dragonfire, reported that Al Qaeda had acquired a live nuclear weapon produced by the former Soviet Union and had successfully smuggled it into New York City. [3] A top-secret Nuclear Emergency Support Team was dispatched to the city. Under a cloak of secrecy that excluded even Mayor Rudolph Giuliani, these

nuclear ninjas searched for the 10-kiloton bomb whose blast could have obliterated a significant portion of Manhattan. Fortunately, Dragonfire's report turned out to be a false alarm. But the central takeaway from the Dragonfire case is this: The U.S. government had no grounds in science or in logic to dismiss the warning.

A nuclear terrorist attack on the United States would have catastrophic consequences even for other countries. After the nuclear detonation, the immediate reaction would be to block all entry points to prevent another bomb from reaching its target, resulting in the disruption of the global "just-in-time" flow of goods and raw materials. Vital markets for international products would disappear, and closely linked financial markets would crash. Researchers at RAND, a U.S.-government-funded think tank, estimated that a nuclear explosion at the Port of Long Beach in California would cause immediate indirect costs worldwide of more than \$3 trillion and that shutting down U.S. ports would cut world trade by 10 percent. [4]

The negative economic repercussions would reverberate well beyond the

developed world. As U.N. Secretary-General Kofi Annan has warned, "Were a nuclear terrorist attack to occur, it would cause not only widespread death and destruction, but would stagger the world economy and thrust tens of millions of people into dire poverty." [5]

How does one assess the probability of an unprecedented event that could have catastrophic consequences? Since there is no established methodology, the soundest way to proceed is to ask and answer the core questions: who, what, where, when, and how?

Who could be planning a nuclear terrorist attack? Al Qaeda remains a formidable enemy with clear nuclear ambitions. In 1998, Osama bin Laden declared that he considered obtaining weapons of mass destruction "a religious duty." [6] According to the final report of the 9/11 Commission, "Al Qaeda has tried to acquire or make nuclear weapons for at least 10 years . . . and continues to pursue its strategic goal of obtaining a nuclear capability." The commission also discusses bin Laden's fascination with what he calls an American "Hiroshima." [7]

Documenting Al Qaeda's growing intent, the CIA reports uncovering "rudimentary diagrams of nuclear weapons inside a suspected Al Qaeda safe house in Kabul. These diagrams, while crude, describe essential components--uranium and high explosives--common to nuclear weapons." [8]

But the threats do not stop at Al Qaeda. A report by the United Nation's Terrorism Prevention Branch, leaked to the press four months before 9/11,

indicated that 130 terrorist groups were capable of developing a homemade atomic bomb if they obtained highly enriched uranium (HEU) or plutonium left over from the Cold War. [9] More recently, "An Encyclopedia for the Preparation of Nuclear Weapons: The Nuclear Bomb of Jihad and the Way to Enrich Uranium" has begun appearing in the virtual training library of some jihadist websites. [10]

What nuclear weapons could terrorists use? Terrorists could acquire a bomb one of two ways: by obtaining a ready-made weapon from the arsenal of one of the nuclear weapon states or by constructing an elementary nuclear bomb from highly enriched uranium made by a state. Theft of a warhead by insiders, or a combination of insiders and intruders, would not be easy. But attempted thefts in Russia and elsewhere are not uncommon.

In 2005, the Russian interior minister in charge of security for many of the nation's nuclear installations stated that "international terrorists have planned attacks against nuclear and power industry installations" with the objective to "seize nuclear materials and use them to build weapons of mass destruction for their own political ends." [11] Such terrorists may find help on the inside: In April 2006, police arrested a foreman of the Elektrostal nuclear fuel fabrication facility and co-conspirators for stealing 49 pounds of low-enriched uranium. The same facility processes large amounts of weapons-usable HEU. [12] The International Atomic Energy Agency has documented 18 cases of trafficking in HEU or plutonium, either of which is a key ingredient of a terrorist's nuclear bomb. [13]

Once a terrorist group acquires 45 kilograms (around 100 pounds) of HEU, building an elementary nuclear bomb no longer takes the mind of an Oppenheimer. With fissile material acquired from a weapon state, using publicly available documents and items commercially obtainable in any technologically advanced country, terrorists could conceivably construct a gun-type bomb like the one dropped on Hiroshima. As John Foster, a leading U.S. bombmaker and former director of the Lawrence Livermore National Laboratory, wrote a quarter-century ago, "If the essential nuclear materials are at hand, it is possible to make an atomic bomb using information that is available in the open literature." [14]

Where could terrorists acquire a nuclear bomb? If a nuclear terrorist attack occurs, Russia will be the most likely source of the weapon or material--not because the Russian government would sell or lose them, but simply because Russia's 11-time-zone expanse contains more nuclear weapons and materials than any other country in the world, much of it still vulnerable to theft.

A close second would be North Korea. Its top leadership has openly boasted that it intends to sell fissile material and even a nuclear weapon--for the right price. During talks in Beijing in April 2003, North Korea's deputy director general for American affairs Li Gun told Assistant Secretary of State James Kelly that Pyongyang not only possessed nuclear weapons but might also export them, saying, "It's up to you whether we . . . transfer them." [15]

In addition, research reactors in 40 developing and transitional countries still hold the essential ingredient for nuclear

bombs. In the past year, the Washington, D.C.-based Nuclear Threat Initiative partnered with the government of Kazakhstan to downblend 6,400 pounds of weapons-usable uranium--enough to make two dozen bombs--so that it is no longer suitable for weapons use. [16] The good news is that, as of October 2005, the material is no longer sitting at a research reactor in Aktau. The bad news is that there are dozens of sites that need similar interventions to keep bombmaking materials out of terrorists' hands.

When could terrorists launch the first nuclear attack? If terrorists bought or stole a nuclear weapon in good working condition, they could explode it today. If the weapon had a lock, the date of detonation would be delayed for several days. [17] If terrorists acquired the 45 kilograms of HEU needed for an elementary nuclear bomb, they could have a working bomb in less than a year.

How could terrorists deliver a nuclear weapon to its target? Two plausible methods would be to "follow the golf clubs" or "follow the drugs."

Imagine a woman who lives in Tokyo wants to play golf at Pebble Beach, but prefers to avoid the hassle of carrying her clubs through U.S. customs. How would she get her clubs to the resort? She would call a freight forwarder, provide a plausible description of the contents of her shipment, and have her golf bag picked up at her home. The clubs would travel by ship from Tokyo to the Port of Oakland in California and then by truck to the golf course. The chance of anyone inspecting her bag between her house and the links is less than 3 percent.

If that seems too risky, terrorists might "follow the drugs," tons of which find

their way to U.S. cities every day. The illicit economy for narcotics and illegal immigrants has built up a vast infrastructure that terrorists could exploit. As Albert Carnesale, an arms control expert, has noted, no one should doubt the ability of terrorists to bring a nuclear weapon to New York: They could simply hide it in a bale of marijuana, which we know comes to all global cities.

In sum, my best judgment is that based on current trends, a nuclear terrorist attack on the United States is more likely than not in the decade ahead. Developments in Iraq, Iran, and North Korea leave Americans more vulnerable to a nuclear 9/11 today than we were five years ago. Former Defense Secretary William Perry has said that he thinks that I underestimate the risk. In the judgment of most people in the national security community, including former Sen. Sam Nunn, the risk of a terrorist detonating a nuclear bomb on U.S. soil is higher today than was the risk of nuclear war at the most dangerous moments in the Cold War. Reviewing the evidence, Warren Buffett, the world's most successful investor and a legendary oddsmaker in pricing insurance policies for unlikely but catastrophic events like earthquakes, has concluded: "It's inevitable. I don't see any way that it won't happen." [18]

The ultimate preventable catastrophe. It is difficult to disagree with Buffet. Nonetheless, I believe that the largely unrecognized good news is that this ultimate catastrophe is, in fact, *preventable*. There exists a feasible, affordable checklist of actions that, if taken, would shrink the risk of nuclear terrorism to nearly zero. The strategic

narrow in this challenge is to prevent terrorists from acquiring nuclear weapons or the materials from which weapons could be made. If this choke point can be squeezed tightly enough, we can deny terrorists the means necessary for the most deadly of all terror acts. As a fact of physics: No HEU or plutonium, no nuclear explosion, no nuclear terrorism.

My book, *Nuclear Terrorism: The Ultimate Preventable Catastrophe*, proposes a strategy for pursuing that agenda, organized under a "Doctrine of Three Nos":

No loose nukes requires securing all nuclear weapons and weapons-usable material, as quickly as possible. The United States and Russia have proven themselves adept at locking up valuable or dangerous items: Gold is not stolen from Fort Knox, nor treasures from the Kremlin Armory.

No new nascent nukes means no new domestic capabilities to enrich uranium or reprocess plutonium. The 1968 Nuclear Non-Proliferation Treaty (NPT) contains a loophole that allows nations to develop these capacities as civilian programs, withdraw from the NPT, utilize equipment and know-how received as a beneficiary of the NPT, and proceed to build nuclear weapons. The proposition of no new nascent nukes acknowledges what the national security community has belatedly come to realize: HEU and plutonium are bombs about to hatch.

No new nuclear weapon states unambiguously declares the nuclear club will not expand beyond its current eight members. Without endorsing the behavior of current nuclear powers, this principle recognizes that the most urgent task is to stop the bleeding before the problem gets

worse. The urgent test of this principle is North Korea, which now stands three-quarters of the way across that line. In February 2006, North Korea declared itself a nuclear weapon state, but it has not yet conducted a nuclear test to gain forced entry into the group of nuclear nations. Preventing Pyongyang from becoming a "Nukes 'R' Us" for terrorists is the biggest challenge the international community faces in the Asian arena.

But what has been done on these fronts to combat nuclear terrorism? Are we any safer from a nuclear terrorist attack than we were on 9/11?

After the Trade Center towers fell, President George W. Bush declared war on terrorism; toppled the Taliban, eliminating Al Qaeda's sanctuary in Afghanistan; and articulated a new doctrine in which the United States would "make no distinction between the terrorists who committed these acts and those who harbor them." The Bush administration made an important conceptual advance in recognizing that the gravest danger lies in what Vice President Dick Cheney termed the "nexus between terrorists and weapons of mass destruction." To minimize that threat, the United States successfully sponsored U.N. Security Council Resolution 1540, which requires states to criminalize proliferation; promoted a new Proliferation Security Initiative, which expands upon existing legal frameworks to allow the interception of WMD-related cargo; and persuaded other members of the G-8 Global Partnership to match a U.S. commitment of \$1 billion annually over the next decade to secure and eliminate former Soviet nuclear weapons. Furthermore, in February 2005 Bush leveraged his personal friendship with Russian President Vladimir Putin to reach an

agreement at Bratislava that each leader would make securing loose nuclear material his personal responsibility and that their respective energy ministers should meet and report regularly on progress toward that goal.

On the other hand, in combating what Bush has rightly identified as "the single most serious threat to the national security to the United States" and the only terrorist attack that could kill a million Americans in one blow, the Bush administration has demonstrated a puzzling absence of focus, energy, and urgency. Indeed, some of the administration's actions have, in fact, made U.S. citizens more vulnerable.

September 11, 2001 demonstrated terrorists' capacity for mega-terrorism. As former CIA Director Porter Goss told Congress last year, "There is sufficient [Russian] material unaccounted for so that it would be possible for those with know-how to construct [a] nuclear weapon." [19] But as of 2005, as the most comprehensive review of what has and has not been done on this agenda concludes, only 54 percent of the buildings in the former Soviet Union holding nuclear material had received comprehensive security upgrades. [20]

Before 9/11, North Korea had, at most, two nuclear weapons worth of plutonium (acquired during the presidency of George H. W. Bush). Today, North Korea has reprocessed enough plutonium for eight additional nuclear bombs and restarted its Yongbyon reactor, where it is producing enough plutonium for two additional bombs a year. In 2003, Tehran offered to negotiate with the United States over Iran's nuclear program and even halt its support for Hamas and Hezbollah terrorists. In the period since the United States rejected that proposal, Iran has

defied the U.N. Security Council's demand that it suspend uranium enrichment-related activity at Isfahan and Natanz, accelerated its program, and elected a new president who has called for Israel to be "wiped off the map."

On its current trajectory, Iran could join North Korea in becoming a nuclear weapon state before the end of the decade, triggering what the U.N. High-Level Panel on Threats, Challenges and Change calls an "erosion of the nonproliferation regime" to a point that "could become irreversible and result in a cascade of proliferation." [21] Having called for war against Iraq on false premises, the Bush administration has paradoxically increased the WMD threat. According to the CIA, while the good news is that Osama bin Laden and the Al Qaeda command can no longer operate headquarters and training camps in Afghanistan, the bad news is that Iraq now provides "recruitment, training grounds, technical skills, and language proficiency for a new class of terrorists who are 'professionalized' and for whom political violence becomes an end in itself." [22] As jihadi networks strengthen in Iraq, on one hand, and Iran and North Korea accelerate their fissile material production, on the other, the likelihood of a deadly nexus between a terrorist buyer and nuclear seller increases. Reversing these trends will require a new strategic approach to the threat of nuclear terrorism.

Winning the war on nuclear terrorism. The United States cannot undertake or sustain the war on nuclear terrorism alone. Nor can the necessary actions simply be commanded, compelled, or coerced. Instead, they

require deep and steady international cooperation rooted in the recognition that nations share an overriding common threat and can only succeed with a common strategy.

Each nation's best hope to achieve conditions essential for its own security requires serious cooperation with the others. The great powers are therefore ripe for mobilization for a new Global Alliance Against Nuclear Terrorism. The mission of this alliance should be to minimize the risk of nuclear terrorism by taking every action physically, technically, and diplomatically possible to prevent nuclear weapons or materials from falling into the hands of terrorists.

Existing alliances are ill-suited to address this global security threat. NATO covers one regional area, the U.S.-Japanese Security Treaty another. The nuclear nonproliferation "regime" consists of a patchwork of treaties like the NPT, informal agreements like the Nuclear Suppliers Group and the Proliferation Security Initiative, nuclear-weapon-free zones in Latin America, Southeast Asia, and the Australia-Pacific region, and assorted bilateral agreements. Meeting the global threat of nuclear terrorism will require a more comprehensive global response.

Construction of this new alliance should begin with the United States and Russia, who have a special obligation to address this problem since they created it--and since they still own 95 percent of all nuclear weapons and materials.

Initially, members of the alliance would join in five common undertakings. First, they would embrace a principle of *assured nuclear security* to *personally* assure that all nuclear weapons and materials on their

own territory are secured to a "gold standard"--beyond the reach of terrorists or thieves. Assured nuclear security requires sufficient transparency to allow other leaders to reassure their own citizens that terrorists will never get a nuclear bomb from another member of this alliance. Second, the alliance would shape a global consensus in support of enforcing the Three Nos. Third, the new alliance should reinvent a more robust nonproliferation regime to control the sale and export of nuclear technologies, materials, and know-how. While Security Council Resolution 1540 obligates sovereign states to close the loopholes exploited by black-market WMD networks, it currently lacks necessary enforcement mechanisms. Fourth, the new alliance would provide a formal infrastructure to apply "lessons learned" from U.S.-Russian and other cooperative ventures against the Taliban and Al Qaeda to the nuclear challenge. For example, this fall, a first-ever joint field exercise seeking to find and capture hypothetical terrorists who have stolen nuclear material will involve Americans and Russians working together in Russia. Finally, this alliance should be not just a signed document but a living institution committed to its mission.

Establishment of a Global Alliance Against Nuclear Terrorism could help us overcome the psychological barriers to sustained, focused action. Faced with the possibility of an American Hiroshima, many are paralyzed by a combination of denial and fatalism. Either it hasn't happened, so it's not going to happen; or, if it is going to happen, there's nothing we can do to stop it. Both propositions are wrong. The countdown to a nuclear 9/11 can be stopped, but only by a combination of imagination, a clear agenda for action, and fierce determination to pursue it.

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