

Calming Our Nuclear Jitters

An exaggerated fear of nuclear weapons has led to many wrongheaded policy decisions. A more sober assessment is needed.

The fearsome destructive power of nuclear weapons provokes understandable dread, but in crafting public policy we must move beyond this initial reaction to soberly assess the risks and consider appropriate actions. Out of awe over and anxiety about nuclear weapons, the world's superpowers accumulated enormous arsenals of them for nearly 50 years. But then, in the wake of the Cold War, fears that the bombs would be used vanished almost entirely. At the same time, concerns that terrorists and rogue nations could acquire nuclear weapons have sparked a new surge of fear and speculation.

In the past, excessive fear about nuclear weapons led to many policies that turned out to be wasteful and unnecessary. We should take the time to assess these new risks to avoid an overreaction that will take resources and attention away from other problems. Indeed, a more thoughtful analysis will reveal that the new perceived danger is far less likely than it might at first appear.

Albert Einstein memorably proclaimed that nuclear weapons “have changed everything except our way of thinking.” But the weapons actually seem to have changed little except our way of thinking, as well as our ways of declaiming, gesticulating, deploying military forces, and spending lots of money.

To begin with, the bomb's impact on substantive historical developments has turned out to be minimal. Nuclear weapons are, of course, routinely given credit for preventing or deterring a major war during the Cold War era. However, it is increasingly clear that the Soviet Union never had the slightest interest in engaging in any kind of conflict that would remotely resemble World War II, whether nuclear or not. Its agenda emphasized revolution, class rebellion, and civil war, conflict areas in which nuclear weapons are irrelevant. Thus, there was no threat of direct military aggression to deter. Moreover, the possessors of nuclear weapons have never been able to find much military reason to use them, even in principle, in actual armed conflicts.

Although they may have failed to alter substantive history, nuclear weapons have inspired legions of strategists to spend whole careers agonizing over what one analyst has called “nuclear metaphysics,” arguing, for example, over how many MIRVs (multiple independently targetable reentry vehicles) could dance on the head of an ICBM (intercontinental ballistic missile). The result was a colossal expenditure of funds.

Most important for current policy is the fact that contrary to decades of hand-wringing about the inherent appeal of nuclear weapons, most countries have actually found them to be a

substantial and even ridiculous misdirection of funds, effort, and scientific talent. This is a major if much-underappreciated reason why nuclear proliferation has been so much slower than predicted over the decades.

In addition, the proliferation that has taken place has been substantially inconsequential. When the quintessential rogue state, Communist China, obtained nuclear weapons in 1964, Central Intelligence Agency Director John McCone sternly proclaimed that nuclear war was “almost inevitable.” But far from engaging in the nuclear blackmail expected at the time by almost everyone, China built its weapons quietly and has never made a real nuclear threat.

Despite this experience, proliferation anxiety continues to flourish. For more than a decade, U.S. policymakers obsessed about the possibility that Saddam Hussein’s pathetic and technologically dysfunctional regime in Iraq could in time obtain nuclear weapons, even though it took the far more advanced Pakistan 28 years. To prevent this imagined and highly unlikely calamity, damaging and destructive economic sanctions were imposed and then a war was waged, and each venture has probably resulted in more deaths than were suffered at Hiroshima and Nagasaki combined. (At Hiroshima and Nagasaki, about 67,000 people died immediately and 36,000 more died over the next four months. Most estimates of the Iraq war have put total deaths there at about the Hiroshima-Nagasaki levels, or higher.)

Today, alarm is focused on the even more pathetic regime in North Korea, which has now tested a couple of atomic devices that seem to have been fizzles. There is even more hysteria about Iran, which has repeatedly insisted it has no intention of developing weapons. If that regime changes its mind or is lying, experience suggests it is likely to find that, except for stoking the national ego for a while, the bombs are substantially valueless and a very considerable waste of money and effort.

A daunting task

Politicians of all stripes preach to an anxious, appreciative, and very numerous choir when they, like President Obama, proclaim atomic terrorism to be “the most immediate and extreme threat to global security.” It is the problem that, according to Defense Secretary Robert Gates, currently keeps every senior leader awake at night.

This is hardly a new anxiety. In 1946, atomic bomb maker J. Robert Oppenheimer ominously warned that if three or four men could smuggle in units for an atomic bomb, they could blow up New York. This was an early expression of a pattern of dramatic risk inflation that has persisted throughout the nuclear age. In fact, although expanding fires and fall-

out might increase the effective destructive radius, the blast of a Hiroshima-size device would “blow up” about 1% of the city’s area—a tragedy, of course, but not the same as one 100 times greater.

In the early 1970s, nuclear physicist Theodore Taylor proclaimed the atomic terrorist problem to be “immediate,” explaining at length “how comparatively easy it would be to steal nuclear material and step by step make it into a bomb.” At the time he thought it was already too late to “prevent the making of a few bombs, here and there, now and then,” or “in another ten or fifteen years, it will be too late.” Three decades after Taylor, we continue to wait for terrorists to carry out their “easy” task.

In contrast to these predictions, terrorist groups seem to have exhibited only limited desire and even less progress in going atomic. This may be because, after brief exploration of the possible routes, they, unlike generations of alarmists, have discovered that the tremendous effort required is scarcely likely to be successful.

The most plausible route for terrorists, according to most experts, would be to manufacture an atomic device themselves from purloined fissile material (plutonium or, more likely, highly enriched uranium). This task, however, remains a daunting one, requiring that a considerable series of difficult hurdles be conquered and in sequence.

Outright armed theft of fissile material is exceedingly unlikely not only because of the resistance of guards, but because chase would be immediate. A more promising approach would be to corrupt insiders to smuggle out the required substances. However, this requires the terrorists to pay off a host of greedy confederates, including brokers and money-transmitters, any one of whom could turn on them or, either out of guile or incompetence, furnish them with stuff that is useless. Insiders might also consider the possibility that once the heist was accomplished, the terrorists would, as analyst Brian Jenkins none too delicately puts it, “have every incentive to cover their trail, beginning with eliminating their confederates.”

If terrorists were somehow successful at obtaining a sufficient mass of relevant material, they would then probably have to transport it a long distance over unfamiliar terrain and probably while being pursued by security forces. Crossing international borders would be facilitated by following established smuggling routes, but these are not as chaotic as they appear and are often under the watch of suspicious and careful criminal regulators. If border personnel became suspicious of the commodity being smuggled, some of them might find it in their interest to disrupt passage, perhaps to collect the bounteous reward money that would probably

New Topographics: Photographs of a Man-altered Landscape

The exhibition *New Topographics: Photographs of a Man-altered Landscape*, originally mounted in 1975 at George Eastman House International Museum of Photography & Film, is considered the second most-cited photography exhibition in the history of the medium. It was a landmark exhibit that signaled the emergence of a new approach to landscape photography, a movement in which the focus shifted from a utopian view of the landscape absent of human presence to one that captured the human interaction with the environment.

The photographers in this exhibit aimed to confront not only the history and traditions of their medium but also contentious cultural and political issues such as environmentalism, objectivity, and national identity. Alison Nordström, curator of photographs at George Eastman House observed that “The question persists as to why this unassuming exhibition came to be so widely known and understood as the seminal event in which photography’s landscape paradigm shifted away from the sublime, ushering in a new era of theoretical approaches. Of those who did see the exhibition, few seem to have thought themselves in the presence of a turning point; paradigm shifts are rarely recognized except in retrospect.”

be offered by alarmed governments once the uranium theft had been discovered.

Once outside the country with their precious booty, terrorists would need to set up a large and well-equipped machine shop to manufacture a bomb and then to populate it with a very select team of highly skilled scientists, technicians, machinists, and administrators. The group would have to be assembled and retained for the monumental task while no consequential suspicions were generated among friends, family, and police about their curious and sudden absence from normal pursuits back home.

Members of the bomb-building team would also have to be utterly devoted to the cause, of course, and they would have to be willing to put their lives and certainly their careers at high risk, because after their bomb was discovered or exploded they would probably become the targets of an intense worldwide dragnet operation.

Some observers have insisted that it would be easy for terrorists to assemble a crude bomb if they could get enough

Recently this seminal exhibition has been recreated for an international tour by the Center for Creative Photography at The University of Arizona and George Eastman House. At the core of this re-examination will be a selection of more than 100 works from the original show. The 10 photographers featured three decades ago are again gathered together: Robert Adams, Lewis Baltz, Bernd and Hilla Becher, Joe Deal, Frank Gohlke, Nicholas Nixon, John Schott, Stephen Shore, and Henry Wessel Jr. The current exhibition demonstrates both the historical significance of their photographs and the continued relevance of this work.

The new presentation and international tour of *New Topographics* is as follows: George Eastman House (June 13–Sept. 27, 2009); Los Angeles County Museum of Art (Oct. 25, 2009–Jan. 3, 2010); Center for Creative Photography (Feb. 19–May 16, 2010); San Francisco Museum of Modern Art (July 17–Oct. 3, 2010); Landesgalerie Linz, Austria (Nov. 10, 2010–Jan. 9, 2011); Photographische Sammlung Stiftung Kultur, Cologne, Germany (Jan. 27–April 3, 2011); Nederlands Fotomuseum, Rotterdam, The Netherlands (June 25–September 11, 2011); and Bilbao Fine Arts Museum, Bilbao (November 2011–February 2012).

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fissile material. But Christoph Wirz and Emmanuel Egger, two senior physicists in charge of nuclear issues at Switzerland’s Spiez Laboratory, bluntly conclude that the task “could hardly be accomplished by a subnational group.” They point out that precise blueprints are required, not just sketches and general ideas, and that even with a good blueprint the terrorist group would most certainly be forced to redesign. They also stress that the work is difficult, dangerous, and extremely exacting, and that the technical requirements in several fields verge on the unfeasible. Stephen Younger, former director of nuclear weapons research at Los Alamos Laboratories, has made a similar argument, pointing out that uranium is “exceptionally difficult to machine” whereas “plutonium is one of the most complex metals ever discovered, a material whose basic properties are sensitive to exactly how it is processed.” Stressing the “daunting problems associated with material purity, machining, and a host of other issues,” Younger concludes, “to think that a terrorist group, working in isolation with an unreliable supply of electricity



ROBERT ADAMS, *Tract Housing, North Glenn and Thornton, Colorado*, Gelatin silver print, 8 x 10 inches, 1973.

and little access to tools and supplies” could fabricate a bomb “is farfetched at best.”

Under the best circumstances, the process of making a bomb could take months or even a year or more, which would, of course, have to be carried out in utter secrecy. In addition, people in the area, including criminals, may observe with increasing curiosity and puzzlement the constant coming and going of technicians unlikely to be locals.

If the effort to build a bomb was successful, the finished product, weighing a ton or more, would then have to be transported to and smuggled into the relevant target country where it would have to be received by collaborators who are at once totally dedicated and technically proficient at handling, maintaining, detonating, and perhaps assembling the weapon after it arrives.

The financial costs of this extensive and extended oper-

TABLE 1

The atomic terrorist's to-do list

- 1** An inadequately secured source of adequate quantities of highly enriched uranium (HEU) must be found.
- 2** The area must be entered while avoiding detection by local police and locals wary of strangers.
- 3** Several insiders who seem to know what they are doing must be corrupted.
- 4** All the insiders must remain loyal throughout the long process of planning and executing the heist, and there must be no consequential leaks.
- 5** The insiders must successfully seize and transfer the HEU, the transferred HEU must not be a scam or part of a sting, and it must not be of inadequate quality due to insider incompetence.
- 6** The HEU must be transported across the country across unfamiliar turf while its possessors are being pursued.
- 7** To get the HEU across one or more international borders, smugglers must be employed and must remain loyal despite, potentially, the temptation of massive reward money, even as no consequential suspicion is generated in other smugglers using the same routes who may be interested in the same money.
- 8** A machine shop must be set up in an obscure area with imported, sophisticated equipment without anyone becoming suspicious.
- 9** A team of highly skilled scientists and technicians must be assembled, and during production all members of the team must remain absolutely loyal to the cause and develop no misgivings or severe interpersonal or financial conflicts.
- 10** The complete team must be transported to the machine shop, probably from several countries, without suspicion and without consequential leaks from relatives, friends, and colleagues about the missing.
- 11** The team must have precise technical blueprints to work from (not general sketches) and must be able to modify these appropriately for the precise purpose at hand over months or even years of labor and without being able to test.
- 12** Nothing significant must go wrong during the long process of manufacture and assembly of the improvised nuclear device.
- 13** There must be no inadvertent leaks from the team.
- 14** Local and international police, on high (even desperate) alert, must not be able to detect the project using traditional policing methods as well as the most advanced technical detection equipment.
- 15** No locals must sense that something out of the ordinary is going on in the machine shop with the constant coming and going of nonlocal people.
- 16** The nuclear device, weighing a ton or more, must be smuggled without detection out of the machine shop to an international border.
- 17** The device must be transported to the target country either by trusting the commercial process filled with people on the alert for cargo of this sort or by clandestine means, which requires trusting corrupt co-conspirators who may also know about any reward money.
- 18** A team of completely loyal and technically accomplished co-conspirators must be assembled within or infiltrated into the target country.
- 19** The nuclear device must successfully enter the target country and be received by the in-country co-conspirators.
- 20** A detonation team must transport the device to the target place and set it off without anybody noticing and interfering, and the untested and much-traveled device must not prove to be a dud.



HENRY WESSEL, Jr., *Buena Vista, Colorado*, Gelatin silver print, 8 x 11.5 inches, 1973.

ation could easily become monumental. There would be expensive equipment to buy, smuggle, and set up and people to pay or pay off. Some operatives might work for free out of utter dedication to the cause, but the vast conspiracy also requires the subversion of a considerable array of criminals and opportunists, each of whom has every incentive to push the price for cooperation as high as possible. Any criminals competent and capable enough to be effective allies are also likely to be both smart enough to see boundless opportunities for extortion and psychologically equipped by their profession to be willing to exploit them.

Those who warn about the likelihood of a terrorist bomb contend that a terrorist group could, if with great difficulty, overcome each obstacle and that doing so in each case is “not impossible.” But although it may not be impossible to surmount each individual step, the likelihood that a group could surmount a series of them quickly becomes vanishingly small. Table 1 attempts to catalogue the barriers that must be overcome under the scenario considered most

likely to be successful. In contemplating the task before them, would-be atomic terrorists would effectively be required to go through an exercise that looks much like this. If and when they do, they will undoubtedly conclude that their prospects are daunting and accordingly uninspiring or even terminally dispiriting.

It is possible to calculate the chances for success. Adopting probability estimates that purposely and heavily bias the case in the terrorists’ favor—for example, assuming the terrorists have a 50% chance of overcoming each of the 20 obstacles—the chances that a concerted effort would be successful comes out to be less than one in a million. If one assumes, somewhat more realistically, that their chances at each barrier are one in three, the cumulative odds that they will be able to pull off the deed drop to one in well over three billion.

Other routes would-be terrorists might take to acquire a bomb are even more problematic. They are unlikely to be given or sold a bomb by a generous like-minded nuclear state for



JOHN SCHOTT, *Untitled* from the series *Route 66 Motels*, Gelatin silver print, 8 x 10 inches, 1973.

delivery abroad because the risk would be high, even for a country led by extremists, that the bomb (and its source) would be discovered even before delivery or that it would be exploded in a manner and on a target the donor would not approve, including on the donor itself. Another concern would be that the terrorist group might be infiltrated by foreign intelligence.

The terrorist group might also seek to steal or illicitly purchase a “loose nuke” somewhere. However, it seems probable that none exist. All governments have an intense interest in controlling any weapons on their territory because of fears that they might become the primary target. Moreover, as technology has developed, finished bombs have been outfitted with devices that trigger a non-nuclear explosion that destroys the bomb if it is tampered with. And there are other security techniques: Bombs can be kept disassembled with the component parts stored in separate high-security vaults, and a process can be set up in which two people and multiple codes are required not only to use the bomb but to

store, maintain, and deploy it. As Younger points out, “only a few people in the world have the knowledge to cause an unauthorized detonation of a nuclear weapon.”

There could be dangers in the chaos that would emerge if a nuclear state were to utterly collapse; Pakistan is frequently cited in this context and sometimes North Korea as well. However, even under such conditions, nuclear weapons would probably remain under heavy guard by people who know that a purloined bomb might be used in their own territory. They would still have locks and, in the case of Pakistan, the weapons would be disassembled.

The al Qaeda factor

The degree to which al Qaeda, the only terrorist group that seems to want to target the United States, has pursued or even has much interest in a nuclear weapon may have been exaggerated. The 9/11 Commission stated that “al Qaeda has tried to acquire or make nuclear weapons for at least ten years,” but the only substantial evidence it supplies comes from an

episode that is supposed to have taken place about 1993 in Sudan, when al Qaeda members may have sought to purchase some uranium that turned out to be bogus. Information about this supposed venture apparently comes entirely from Jamal al Fadl, who defected from al Qaeda in 1996 after being caught stealing \$110,000 from the organization. Others, including the man who allegedly purchased the uranium, assert that although there were various other scams taking place at the time that may have served as grist for Fadl, the uranium episode never happened.

As a key indication of al Qaeda's desire to obtain atomic weapons, many have focused on a set of conversations in Afghanistan in August 2001 that two Pakistani nuclear scientists reportedly had with Osama bin Laden and three other al Qaeda officials. Pakistani intelligence officers characterize the discussions as "academic" in nature. It seems that the discussion was wide-ranging and rudimentary and that the scientists provided no material or specific plans. Moreover, the scientists probably were incapable of providing truly helpful information because their expertise was not in bomb design but in the processing of fissile material, which is almost certainly beyond the capacities of a nonstate group.

Kalid Sheikh Mohammed, the apparent planner of the 9/11 attacks, reportedly says that al Qaeda's bomb efforts never went beyond searching the Internet. After the fall of the Taliban in 2001, technical experts from the CIA and the Department of Energy examined documents and other information that were uncovered by intelligence agencies and the media in Afghanistan. They uncovered no credible information that al Qaeda had obtained fissile material or acquired a nuclear weapon. Moreover, they found no evidence of any radioactive material suitable for weapons. They did uncover, however, a "nuclear-related" document discussing "openly available concepts about the nuclear fuel cycle and some weapons-related issues."

Just a day or two before al Qaeda was to flee from Afghanistan in 2001, bin Laden supposedly told a Pakistani journalist, "If the United States uses chemical or nuclear weapons against us, we might respond with chemical and nuclear weapons. We possess these weapons as a deterrent." Given the military pressure that they were then under and taking into account the evidence of the primitive or more probably nonexistent nature of al Qaeda's nuclear program, the reported assertions, although unsettling, appear at best to be a desperate bluff.

Bin Laden has made statements about nuclear weapons a few other times. Some of these pronouncements can be seen to be threatening, but they are rather coy and indirect, indicating perhaps something of an interest, but not acknowl-

edging a capability. And as terrorism specialist Louise Richardson observes, "Statements claiming a right to possess nuclear weapons have been misinterpreted as expressing a determination to use them. This in turn has fed the exaggeration of the threat we face."

Norwegian researcher Anne Stenersen concluded after an exhaustive study of available materials that, although "it is likely that al Qaeda central has considered the option of using non-conventional weapons," there is "little evidence that such ideas ever developed into actual plans, or that they were given any kind of priority at the expense of more traditional types of terrorist attacks." She also notes that information on an al Qaeda computer left behind in Afghanistan in 2001 indicates that only \$2,000 to \$4,000 was earmarked for weapons of mass destruction research and that the money was mainly for very crude work on chemical weapons.

Today, the key portions of al Qaeda central may well total only a few hundred people, apparently assisting the Taliban's distinctly separate, far larger, and very troublesome insurgency in Afghanistan. Beyond this tiny band, there are thousands of sympathizers and would-be jihadists spread around the globe. They mainly connect in Internet chat rooms, engage in radicalizing conversations, and variously dare each other to actually do something.

Any "threat," particularly to the West, appears, then, principally to derive from self-selected people, often isolated from each other, who fantasize about performing dire deeds. From time to time some of these people, or ones closer to al Qaeda central, actually manage to do some harm. And occasionally, they may even be able to pull off something large, such as 9/11. But in most cases, their capacities and schemes, or alleged schemes, seem to be far less dangerous than initial press reports vividly, even hysterically, suggest. Most important for present purposes, however, is that any notion that al Qaeda has the capacity to acquire nuclear weapons, even if it wanted to, looks farfetched in the extreme.

It is also noteworthy that, although there have been plenty of terrorist attacks in the world since 2001, all have relied on conventional destructive methods. For the most part, terrorists seem to be heeding the advice found in a memo on an al Qaeda laptop seized in Pakistan in 2004: "Make use of that which is available . . . rather than waste valuable time becoming despondent over that which is not within your reach." In fact, history consistently demonstrates that terrorists prefer weapons that they know and understand, not new, exotic ones.

Glenn Carle, a 23-year CIA veteran and once its deputy intelligence officer for transnational threats, warns, "We must not take fright at the specter our leaders have exagger-

ated. In fact, we must see jihadists for the small, lethal, disjointed, and miserable opponents that they are.” al Qaeda, he says, has only a handful of individuals capable of planning, organizing, and leading a terrorist organization, and although the group has threatened attacks with nuclear weapons, “its capabilities are far inferior to its desires.”

Policy alternatives

The purpose here has not been to argue that policies designed to inconvenience the atomic terrorist are necessarily unneeded or unwise. Rather, in contrast with the many who insist that atomic terrorism under current conditions is rather likely—indeed, exceedingly likely—to come about, I have contended that it is hugely unlikely. However, it is important to consider not only the likelihood that an event will take place, but also its consequences. Therefore, one must be concerned about catastrophic events even if their probability is small, and efforts to reduce that likelihood even further may well be justified.

At some point, however, probabilities become so low that, even for catastrophic events, it may make sense to ignore them or at least put them on the back burner; in short, the risk becomes acceptable. For example, the British could at any time attack the United States with their submarine-launched missiles and kill millions of Americans, far more than even the most monumentally gifted and lucky terrorist group. Yet the risk that this potential calamity might take place evokes little concern; essentially it is an acceptable risk. Meanwhile, Russia, with whom the United States has a rather strained relationship, could at any time do vastly more damage with its nuclear weapons, a fully imaginable calamity that is substantially ignored.

In constructing what he calls “a case for fear,” Cass Sunstein, a scholar and current Obama administration official, has pointed out that if there is a yearly probability of 1 in 100,000 that terrorists could launch a nuclear or massive biological attack, the risk would cumulate to 1 in 10,000 over 10 years and to 1 in 5,000 over 20. These odds, he suggests, are “not the most comforting.” Comfort, of course, lies in the viscera of those to be comforted, and, as he suggests, many would probably have difficulty settling down with odds like that. But there must be some point at which the concerns even of these people would ease. Just perhaps it is at one of the levels suggested above: one in a million or one in three billion per attempt.

As for that other central policy concern, nuclear proliferation, it seems to me that policymakers should maintain their composure. The pathetic North Korean regime mostly seems to be engaged in a process of extracting aid and recognition from outside. A viable policy toward it might be to reduce

the threat level and to wait while continuing to be extorted, rather than to carry out policies that increase the already intense misery of the North Korean people.

If the Iranians do break their pledge not to develop nuclear weapons (a conversion perhaps stimulated by an airstrike on its facilities), they will probably “use” any nuclear capacity in the same way all other nuclear states have: for prestige (or ego-stoking) and deterrence. Indeed, suggests strategist and Nobel laureate Thomas Schelling, deterrence is about the only value the weapons might have for Iran. Nuclear weapons, he points out, “would be too precious to give away or to sell” and “too precious to waste killing people” when they could make other countries “hesitant to consider military action.”

It seems overwhelmingly probable that, if a nuclear Iran brandishes its weapons to intimidate others or to get its way, it will find that those threatened, rather than capitulating to its blandishments or rushing off to build a compensating arsenal of their own, will ally with others, including conceivably Israel, to stand up to the intimidation. The popular notion that nuclear weapons furnish a country with the capacity to dominate its region has little or no historical support.

The application of diplomacy and bribery in an effort to dissuade these countries from pursuing nuclear weapons programs may be useful; in fact, if successful, we would be doing them a favor. But although it may be heresy to say so, the world can live with a nuclear Iran or North Korea, as it has lived now for 45 years with a nuclear China, a country once viewed as the ultimate rogue.

Should push eventually come to shove in these areas, the problem will be to establish orderly deterrent and containment strategies and to avoid the temptation to lash out mindlessly at fancied threats. Although there is nothing wrong with making nonproliferation a high priority, it should be topped with a somewhat higher one: avoiding policies that can lead to the deaths of tens or hundreds of thousands of people under the obsessive sway of worst-case scenario fantasies.

In the end, it appears to me that, whatever their impact on activist rhetoric, strategic theorizing, defense budgets, and political posturing, nuclear weapons have had at best a quite limited effect on history, have been a substantial waste of money and effort, do not seem to have been terribly appealing to most states that do not have them, are out of reach for terrorists, and are unlikely to materially shape much of our future.

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