



# PeaceMeal - Food for Thought

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## 2024 Chinese nuclear weapons

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Within the past five years, China has significantly expanded its ongoing nuclear modernization program by fielding more types and greater numbers of nuclear weapons than ever before. Since our previous edition on China in March 2023, China has continued to develop its three new missile silo fields for solid-fuel intercontinental ballistic missiles (ICBMs), expanded the construction of new silos for its liquid-fuel DF-5 ICBMs, has been developing new variants of ICBMs and advanced strategic delivery systems, and has likely produced excess warheads for eventual upload onto these systems once they are deployed.

China has also further expanded its dual-capable DF-26 intermediate-range ballistic missile force, which appears to have completely replaced the medium-range DF-21 in the nuclear role. At sea, China has been refitting its Type 094 ballistic missile submarines with the longer-range JL-3 submarine-launched ballistic missile. In addition, China has recently reassigned an operational nuclear mission to its bombers and is developing an air-launched ballistic missile that might have nuclear capability. In all, China's nuclear expansion is among the largest and most rapid modernization campaigns of the nine nuclear-armed states.

We estimate that China has produced a stockpile of approximately 440 nuclear warheads for delivery by land-based ballistic missiles, sea-based ballistic missiles and bombers. Roughly 60 more warheads are thought to have been produced, with more in production, to eventually arm additional road-mobile and silo-based missiles and bombers.

## U.S. must rethink Israel relations

When is the U.S. going to end its special relationship with Israel? Israel is known as a corrupt, repressive government by most other nations. It uses torture, arbitrary punishment, apartheid and occupies West Bank territories seized by its military.

The idea of Israel as the beleaguered little democracy has not been true for a while. Yet over one-third of our foreign aid budget or \$3 billion of American taxpayer money goes to Israel every year in spite of the fact that it has a booming economy and an average income level similar to Western Europe. In addition, the U.S. blocks any United Nations resolution that Israel objects to, damaging its own interests and making it complicit in a growing list of Israel's war crimes.

What is the quid pro quo in the foreign aid provided by the

The Pentagon's 2023 report to Congress assessed that China's nuclear stockpile now includes over 500 warheads, in accordance with our own estimate. The Pentagon also estimates that China's arsenal will increase to about 1,000 warheads by 2030, many of which will probably be "deployed at higher readiness levels"• and most "fielded on systems capable of ranging the [continental United States]."• If expansion continues at the current rate, the Pentagon's previous projections say that China might field a stockpile of about 1,500 nuclear warheads by 2035.

These projections depend on many uncertain factors, including:

- How many missile silos China will ultimately build;
- How many silos China will load with missiles;
- How many warheads each missile will carry;
- How many DF-26 intermediate-range ballistic missiles will be deployed and how many of them will have a nuclear mission;
- How many missile submarines China will field and how many warheads each missile will carry;
- How many bombers China will operate and how many weapons each will carry; and
- Assumptions about the future production of fissile materials by China.

Several U.S. government estimates about China's nuclear weapons stockpile growth have previously proven inaccurate. The latest Pentagon projection appears to simply apply the same growth rate of new warheads added to the stockpile between 2019 and 2021 to the subsequent years until 2035. We assess that this projected growth trajectory is feasible but depends significantly upon answers to the above questions.

U.S.? To date, Israel is ignoring suggestions by the U.S. regarding its current excursion into Gaza. No wonder there is worldwide perception of the U.S. as being in Israel's pocket.

Israel needs to be treated based on actual American national interests and the \$3-billion of taxpayer money should be terminated.

Bill Petrie, Richland

Letter to the editor, Tri-City Herald, December 17, 2023

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# The Return of Nuclear Escalation

Keir A. Lieber and Daryl G. Press

Foreign Affairs, November/December 2023

Nuclear weapons once again loom large in international politics, and a dangerous pattern is emerging. In the regions most likely to draw the United States into conflict — the Korean Peninsula, the Taiwan Strait, eastern Europe, and the Persian Gulf — U.S. adversaries appear to be acquiring, enhancing or threatening to use nuclear weapons. North Korea is developing intercontinental ballistic missiles that can reach the United States; China is doubling the size of its arsenal; Russia is threatening to use nuclear weapons in its war in Ukraine; and according to U.S. officials, Iran has amassed enough fissile material for a bomb. Many people hoped that once the Cold War ended, nuclear weapons would recede into irrelevance. Instead, many countries are relying on them to make up for the weakness of their conventional military forces.

Still, optimists in the United States argue that the risk of nuclear war remains low. Their reasoning is straightforward: the countries that are building up and brandishing their nuclear capabilities are bluffing. Nuclear weapons cannot paper over conventional military weakness because threats to escalate — even by a desperate enemy — are not credible. According to the optimists, giving credence to the nuclear bluster of weak enemies is misguided and plays squarely into their hands.

Unfortunately, the optimists are wrong. The risk of nuclear escalation during conventional war is much greater than is generally appreciated. The conundrum that U.S. adversaries face today — how to convincingly threaten escalation and bring a nuclear-armed opponent to a stalemate — was solved decades ago by the United States and its NATO allies. Back then, the West developed a strategy of coercive nuclear escalation to convince the Soviet Union that NATO allies would actually use nuclear weapons if they were invaded. Today, U.S. rivals have adopted NATO's old nuclear strategy and developed their own options for credible escalation. The United States must take seriously the nuclear capabilities and resolve of its foes. It would be tragic for Washington to stumble into nuclear war because it discounted the very strategy that it invented decades ago.

In the late 1950s, the forces of the Warsaw Pact, an alliance of the Soviet Union and seven other satellite states, outnumbered those of NATO in terms of manpower by about three to one. Up to that point, NATO's response to Soviet conventional superiority had been simple. If the Soviets invaded Western Europe, the United States would launch an all-out nuclear bombing campaign against the Soviet Union. The message to Moscow was brutal but credible: the Soviets might have conventional superiority, but the next European war would not remain conventional.

But this strategy began to fall apart merely a decade into the Cold War. The Soviet Union was on the cusp of fielding a strong nuclear arsenal of its own, a vast improvement over the small and vulnerable force it had deployed up to that point. Soon, NATO's strategy would no longer make sense. The alliance could not credibly threaten to respond to a conventional invasion with a full-blown nuclear strike on the Soviet Union because the Soviets would have the capability to retaliate in kind. During a war, NATO would face a lose-lose choice: lose a fight with conventional weapons or initiate a mutually catastrophic nuclear exchange. In other words, in the latter decades of the Cold War,

NATO faced the same challenge that many U.S. adversaries face today: it had little hope of prevailing in a conventional war, and no hope of winning a nuclear one.

NATO found an answer to this problem. The alliance made plans to use nuclear weapons in the event of war, but in a different way. Instead of relying solely on the threat of a massive U.S. nuclear strike on the Soviet Union, NATO would respond to an invasion by using nuclear weapons coercively. That is, they would launch a few nuclear weapons — probably tactical ones, which have small yields and short ranges — against military targets to convince Soviet leaders that the war was spinning out of control, pressuring them to stop the invasion. Such a use of nuclear weapons could deliver a heavy blow to a Soviet advance, but more important, it would demonstrate to Soviet leaders that they were courting nuclear disaster. NATO had solved what had seemed to be an intractable problem: how to use nuclear threats to stalemate an enemy they could not beat at the conventional or nuclear level.

To back up this strategy, the United States deployed thousands of tactical nuclear weapons to Europe so that Washington could escalate in a manner that was distinguishable from an all-out strike on the Soviet Union. The alliance also created a “nuclear sharing” arrangement, whereby U.S. weapons based in Europe would be given to several NATO allies during a war, so that the countries the Soviet Union hoped to overrun would have their own nuclear defenses.

The details of NATO's strategy evolved over time, but the core rationale remained constant. NATO would not keep its nuclear weapons holstered as its member states were being conquered, nor would it launch a suicidal nuclear strike on the Soviet Union. Instead, the alliance would escalate gradually and coercively, ensuring that the risks of continuing the conflict were too great for the Soviets to bear.

At the time, analysts criticized many aspects of NATO's strategy. For example, they argued that nuclear strikes on Soviet military targets would trigger retaliation against NATO's forces, thus negating any advantage of using nuclear weapons in the first place. But the point of NATO's escalation was not to change the military balance per se, but to use the shock of nuclear strikes to generate fear and compel the Soviets to accept a cease-fire. Other critics asked why NATO should expect that, once both sides escalated, the Soviets would be the party to blink first. But deterrence strategists noted that in a defensive war, the NATO allies would care more about defending their own freedom and territorial independence than the Soviets would care about waging a war of aggression. In contests of resolve, after all, the side that cares the most has the advantage.

Critics disapproved of NATO's strategy for other reasons — threatening to start a potentially civilization-ending nuclear war seemed immoral, and assuming that escalation could be controlled once started appeared foolish. NATO leaders could not allay such criticisms, but the alliance nevertheless relied on the logic of deliberate escalation to defend itself from an otherwise overwhelming foe. NATO's strategy made nuclear weapons the ultimate weapons of the weak, the perfect tool for holding off powerful rivals.

This strategy of nuclear escalation did not disappear when the Cold War ended. Around the world today, several nuclear-armed countries that find themselves outmatched at the conventional ↵

military level lean on nuclear weapons to stave off catastrophic military defeat.

Pakistan is a prime example. Its principal adversary, India, has five times the population, nine times the GDP, and spends six times as much on its military. To make matters worse, most of Pakistan's largest cities are less than 100 miles from the Indian border, and the terrain in the most likely corridors of an Indian invasion is difficult to defend. Unable to build sufficient conventional defenses, Pakistan's leaders worry that a major war would lead to the destruction of its army and the seizure or isolation of its major cities. And so they rely on nuclear weapons to keep their next-door neighbor at bay.

Pakistan has approximately 170 nuclear warheads, a third of which are tactical. Pakistani officials have made clear that the country's nuclear posture is designed to deter or halt an Indian invasion. The former head of Pakistan's Strategic Plans Division, Lieutenant General Khalid Kidwai, explained in 2015 that "by introducing the variety of tactical nuclear weapons in Pakistan's inventory, . . . we have blocked the avenues for serious military operations by the other side." In May 2023, he reiterated that the purpose of Pakistan's diverse arsenal is to give it a "strategic shield" to blunt India's conventional military superiority. To this end, Pakistan has focused on being able to rapidly assemble, mobilize and disperse nuclear weapons at the outset of any conflict. Of course, Pakistan could not hope to win a nuclear war against India — which has a comparable number of nuclear warheads and sophisticated delivery systems capable of retaliation — but Pakistan could inflict tremendous pain on its neighbor, coercing India to halt a conventional military campaign.

North Korea has adopted a similar strategy. Pyongyang's conventional military is vastly outmatched by the combined forces of South Korea and the United States. North Korea's army is large, but its military equipment is decrepit, and its troops rarely conduct training beyond simple small-unit exercises. Lacking the resources to compete militarily, Pyongyang leans heavily on its nuclear weapons. As the North Korean leader Kim Jong Un explained in 2022, although the primary mission of his country's nuclear arsenal is to deter an attack, he would use nuclear weapons to repel an attack if deterrence failed. "If any forces try to violate the fundamental interests of our state, our nuclear forces will have to decisively accomplish [this] unexpected second mission," Kim said.

U.S. and South Korean military planners, like their Indian counterparts, must now grapple with the same problem the Soviets once faced: how to capitalize on conventional military advantages against an enemy that may be willing to use nuclear weapons. The United States has more than enough nuclear weapons to respond to North Korean nuclear escalation, as leaders in Pyongyang surely know. But if there is a war on the Korean Peninsula, North Korea will be desperate. The country's leaders fear succumbing to the same fate as recent rulers who lost conventional wars, such as Saddam Hussein in Iraq and Muammar al-Qaddafi in Libya, who were killed after being ousted. With their regime and lives on the line, Pyongyang's leaders would face enormous pressure to start a perilous tit-for-tat nuclear exchange — at first striking targets in the region, and then possibly in the United States — to compel their opponents in Seoul and Washington to accept a cease-fire.

Unlike Pakistan and North Korea, China has declined to use nuclear threats to compensate for its conventional military inferiority relative to the United States. China's reluctance to

depend on nuclear threats is particularly notable given the high stakes of a major war over Taiwan. Defeat in such a conflict might lead to formal independence for the island — a major blow to China's conception of its sovereignty. Perhaps more important, the loss of Taiwan would humiliate the Chinese Communist Party and could stoke a nationalist backlash or internal coup. Nevertheless, China has focused on improving its conventional military rather than readying its nuclear arsenal for wartime coercion. In fact, Beijing asserts that it will never be the first side in a conflict to use nuclear weapons. [The United States does not have a no-first-use-policy.]

To be clear, China's nuclear doctrine is not as simple as it sounds. According to Chinese military documents, Beijing would consider exceptions to its no-first-use policy if China faced a major military defeat in a high-stakes conventional war. And Chinese strategists have considered how low-yield nuclear weapons could be used coercively. Additionally, around 2019 China began updating its nuclear forces in ways that would support a coercive strategy. It has increased the size, readiness and diversity of its arsenal to increase its survivability. This would allow Beijing to initiate wartime escalation without fear that the United States could respond by destroying its nuclear force. Finally, China's leaders could change their official stance during a war and use nuclear weapons if a conflict against the United States went badly. But as of now, China remains committed in its rhetoric to eschewing a nuclear first use and in addressing its military weaknesses by strengthening its conventional military power.

China's current no-first-use policy aside, the pattern is dangerous to ignore: nuclear-armed countries that fear catastrophic military defeat frequently adopt escalatory doctrines to keep their enemies at bay. For NATO during the Cold War, Pakistan or North Korea today, and perhaps even China in the future, nuclear escalation on the battlefield makes sense if the only alternative is a regime-threatening defeat. Coercive nuclear escalation is a competition in pain — both inflicting it and suffering it — which is a type of conflict that invariably favors the desperate.

Russia is another country that embraces the strategy of coercive nuclear escalation. When the Cold War ended, the Western allies — suddenly freed from the fear of major military defeat in Europe — quickly soured on nuclear forces. Russia, acutely aware of its newfound conventional military inferiority, did the opposite, adapting NATO's old ideas about nuclear escalation to Russia's new circumstances.

Analysts debate the details of Russia's current nuclear doctrine, but most agree that it calls for escalation to deter or stop the most serious military threats to Russian security. Like other conventionally weak but nuclear-armed countries, Russia has integrated into its conventional war-fighting plans and exercises many tactical nuclear weapons, including air-delivered bombs, cruise missiles and short-range ballistic missiles. If the fighting in Ukraine shifts significantly in favor of Kyiv, and Russian President Vladimir Putin decides that defeat in Ukraine threatens his regime, Russia appears capable — and likely willing — to initiate a coercive nuclear war.

Putin has always portrayed the war in Ukraine as a core national security interest, based on historic territorial claims and the perceived threat of Ukraine's membership in NATO. He has publicly framed the war in nearly existential terms. Perhaps most important, complete defeat in Ukraine would be humiliating ↔ and particularly dangerous to a leader who has built his power on a

reputation for strength, acumen and restoring Russian greatness. Preventing military catastrophe would be of paramount importance to Putin, and nuclear escalation would be one of his few remaining cards to play. No enemy army stands poised to invade Russia. But if Putin believes that complete defeat in Ukraine will lead to his being toppled — and killed or detained — he will likely see the stakes as sufficiently high to use nuclear weapons. The reasoning behind escalation is brutal, similar to that for blackmail or torture. But self-interested leaders facing a defeat that could cost them their lives may have no other option.

Russian leaders have made the links between the war in Ukraine and nuclear escalation clear. One of Russia's most senior defense officials and former president, Dmitry Medvedev, said in July 2023 that Russia "would have to use nuclear weapons" if Ukraine's counteroffensive succeeded in retaking Russian-held territory. "There simply wouldn't be any other solution," he said. Putin claimed in February 2023 that Western countries "intend to transform a local conflict into a phase of global confrontation," adding that Russia "will react accordingly, because in this case we are talking about the existence of our country." And in September 2022, he said that Russia would use "all means at its disposal" to defend its territorial annexations in Ukraine.

Perhaps these nuclear threats are mere bluffs aimed at convincing the West to end its support for Ukraine. In fact, some Western observers discount the plausibility of escalation, noting that if Russia's military position in Ukraine starts to collapse, nuclear escalation would not solve Moscow's problem. Ukraine's military forces are dispersed, so even a handful of Russian tactical nuclear strikes would do limited damage to Kyiv's forces. Moreover, Russian escalation would only make the Kremlin's problems worse because NATO would probably respond with conventional attacks against Russian forces in Ukraine. In short, according to the skeptics, Russia's nuclear threats are hollow.

If Russian escalation triggered a large-scale conventional NATO attack on Russia's forces in Ukraine, as many analysts expect it would, Moscow could just use nuclear weapons again — much as NATO would have done in the face of a Soviet invasion. Had the Soviet Union invaded a NATO member, the balance of wills would have favored NATO because the allies would have been fighting to protect their own freedom and territory. Now, if defeat in Ukraine endangers Putin's regime, the Kremlin would have the most to lose.

To be sure, Russian nuclear escalation is only one possible course. The current battlefield stalemate may drag on until the two sides grudgingly agree to a cease-fire. Perhaps Russian forces will regain the initiative and seize larger swaths of Ukrainian territory. Or maybe Putin's domestic opponents will remove him from power, opening the door to a better settlement for Ukraine. It is even possible that if Russia's leaders order nuclear escalation, military commanders may refuse to carry it out, instead launching a coup to end Putin's regime. The future of the conflict is uncertain, but the logic and history of the nuclear age is clear: when a conventionally superior army backs a nuclear-armed enemy against a wall, it risks nuclear war.

Hawkish policy analysts suggest that the United States can stare down its adversaries' nuclear threats if Washington has enough military power, a resolute mindset, and a strong nuclear deterrent. But those attributes will not deter an enemy that is cornered. The United States will be in grave danger if it underestimates the will of desperate, nuclear-armed adversaries.

The good news is that the Biden administration appears to understand the risk of escalation in the Ukraine war. Early statements made by U.S. President Joe Biden suggesting that Putin "cannot remain in power" have been replaced with more moderate rhetoric, and U.S. leaders have limited the kinds of weapons they provide Ukraine in large part to manage the dangers of escalation. Similarly, U.S. planners have encouraged their South Korean allies to consider wartime objectives far short of complete victory, to avoid pushing the Kim regime to the edge of nuclear war. For example, if North Korea launches a major artillery attack on South Korea, the wisest response may be to destroy or seize those artillery positions but not continue the campaign north to Pyongyang.

But it is impossible to know for sure how an enemy will react in war, especially because leaders are incentivized to misrepresent their actual redlines. Fighting nuclear-armed adversaries is a dangerous game of brinkmanship. There are military steps the United States can take to reduce these dangers. For potential conflicts on the Korean Peninsula and across the Taiwan Strait, the U.S. military should be developing strategies for waging conventional war in a manner designed to reduce the risks of escalation. For example, the U.S. military should minimize attacks that undermine an enemy leadership's situational awareness and hold on power, such as strikes on national command-and-control networks, nuclear forces and leadership targets themselves. Enemies who rely on nuclear weapons to stalemate U.S. military power will, of course, adapt as well; they will likely entangle the conventional and nuclear domains to prevent the United States from safely waging a conventional war. But the United States can make plans to escalate conventionally without threatening the survival of an enemy regime, thereby reducing the risk that a desperate leader will employ a nuclear weapon.

The United States must take the growing threat of coercive nuclear escalation seriously. After the Cold War, the United States became more ambitious in its foreign policy objectives. It spread Western political values and free markets and forged military ties around the world. But such objectives are opposed by nuclear-armed adversaries in China, North Korea, Russia and perhaps soon in Iran. U.S. policymakers would be wise to not discount the potential power of their enemies. And if they need to be reminded of what their foes may be able to do, they need turn only to their own history.

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At sub base Bangor on the eastern shore of Hood Canal, twenty miles northwest of Seattle, is the largest stockpile of deployed nuclear weapons anywhere in the world.

"Global nuclear war can no longer be the continuation of rational politics, as it would bring the end of all life and, therefore, of all politics."

~ Mikhail Gorbachev, last leader of the Soviet Union

# Why the Biden administration's new nuclear gravity bomb is tragic

Stephen Young

In late October 2023, the Pentagon announced — to the surprise of many, including congressional staffers who work on these issues — that it was pursuing a new nuclear weapon to be known as the B61-13, a gravity bomb. This is a troubling development for many reasons. First, it is merely the latest in a long line of new nuclear weapons that the United States is building or proposing, in yet another sign that a new nuclear arms race is expanding. In addition, it breaks a promise the Obama administration made to eliminate almost all types of U.S. nuclear gravity bombs, while further undermining President Biden's pledge to reduce the role of nuclear weapons in U.S. security. Most tragically, it further cements an absolute commitment on the part of the United States to retain nuclear deterrence as the centerpiece of its security policy for decades to come. While most of us hope the world can eventually stop relying on the threat of mass murder at a global scale as the basis for international security, the B61-13 moves everyone further away from that day.

Starting from the top, here is the entire, vast set of new nuclear bombs and warheads the United States recently developed or is pursuing:

- The Trump administration's new "low-yield" warhead, deployed on sea-launched ballistic missiles (SLBMs) carried by U.S. submarines, with an estimated explosive yield roughly one-third the size of the gravity bomb dropped on Hiroshima. "Low-yield" is a relative term; this warhead could still kill tens of thousands in an instant.
- The new, more lethal B61-12 gravity bomb that the National Nuclear Security Administration (NNSA) recently started producing, after many years of delay (and with each bomb costing more than its weight in gold).
- The updated warhead for the stealthy air-launched cruise missile first proposed by the Obama administration, ideally suited to start a nuclear war.
- A variant of that cruise missile warhead for a sea-launched cruise missile that a) the Trump administration proposed, b) the Biden administration is trying to cancel, but c) Congress recently required the administration to pursue.
- The precedent-setting warhead for land-based missiles that, for the first time since the end of the Cold War, will be made entirely from new components, with nothing being reused except the basic design of the warhead.
- The momentous new warhead for submarine-launched ballistic missiles, the first entirely new bomb since the end of the Cold War, with both the components and the design of the weapon made anew.
- The B61-13.

All these new bombs and warheads are just part of a massive rebuilding of the entire U.S. nuclear arsenal, which also includes new long-range, land-based missiles, new submarines, new stealthy, long-range bombers that will carry the new stealthy cruise missiles mentioned above, and major upgrades to the missiles carried by the submarines. The total cost to do all that while maintaining the existing weapons will be well over \$1.2 trillion during the next 25 years.

In short, a new nuclear arms race is exploding across the globe, and while the Biden administration has not announced plans to increase the size of its nuclear arsenal (despite bipartisan pressure to do so), it is racing to climb what is often called a "modernization mountain" — a journey that will certainly take longer and cost far more than currently projected, all to produce a vastly oversized nuclear stockpile that everyone hopes will never be used.

**The broken promise.** There is a second and compounding problem with the B61-13: It breaks a promise made during the Obama administration to eliminate all but one of the types of U.S. gravity bombs. Specifically, to win support for the B61-12 — a new guided gravity bomb the Pentagon and NNSA badly wanted — the Obama administration proposed to retire the B61-3, B61-4, B61-7, B61-10, B61-11, and the B83 gravity bombs, trading six weapons for one. Unfortunately, since its inception, the B61-12 has faced major cost overruns and years of delays. The NNSA initially said the bomb would cost \$4-billion, then quickly raised the tab to \$8-billion, while the Pentagon initially estimated it at \$10-billion. The actual cost, including work the Air Force is doing, will be as much as \$14-billion. The NNSA initially projected it would begin making the bombs in 2017, while the Pentagon said it would be 2022 before work started. The Pentagon was right, with the B61-12 finally entering production late in 2022.

On top of all the cost increases and delays, the associated commitment to retire the six other gravity bombs is changing significantly. First, it is not clear the B61-11 will be retired at all; planning documents no longer include it as something the B61-12 will replace. That variant is designed to penetrate into the Earth, to attack hardened and deeply buried targets. No administration has ever explained why it was removed from the retirement list; it simply stopped being included on it. Second, the sole bright spot is the B61-10, but oddly so. Although the bomb's retirement was tied to starting production of the B61-12, the B61-10 was removed from the stockpile in 2016. Apparently, it really was not needed at all, regardless of the B61-12.

More dangerously, the decision to retire the B83 — by far the most destructive weapon in the US nuclear stockpile — was reversed by the Trump administration. The B83 has an explosive yield of some 1.2 megatons — or 80 times larger than the bomb dropped on Hiroshima. In a simulation developed by the Union of Concerned Scientists (where I work), dropping one bomb like the B83 on a nuclear facility in Iran would kill over three million people and spread deadly radiation across Afghanistan, Pakistan, and India. It is this behemoth that the Trump administration declared its intention to keep "until a suitable replacement is identified." Fortunately, the Biden administration reversed the reversal, and the B83 is currently on a path to be retired at some point, though the plan for when that will happen is classified. (Unfortunately, election results this year could again change that outcome.)

In the meantime, the Biden administration has announced the B61-13. Significantly, this new bomb will be based on the B61-7, the most destructive of the B61 variants, with a ↵

maximum yield of 360 kilotons, or 24 times more devastating than the bomb dropped on Hiroshima. Just to remind you, that one bomb killed 70,000 to 140,000 people. In other words, the B61-13 will be massively destructive, accompanied by immense and widespread fallout. In other other words, this is yet another tool for nuclear warfighting — or, more specifically, seeking to win a nuclear war.

That mission should not exist. Indeed, as five of the countries with nuclear weapons — the United States, Russia, China, France and the United Kingdom — have declared, “a nuclear war cannot be won and must never be fought.”

Yet fighting and winning a nuclear war is precisely the goal of developing the B61-13. There are, apparently, specific targets that this more powerful gravity bomb can hold at risk — ones that cannot reliably be destroyed with the B61-12, despite its vastly increased accuracy in comparison to existing gravity bombs. But existing nuclear warheads on submarine-based missiles can already hold those same targets at risk. So the B61-13, it turns out, is just another option to blow up something the Pentagon can already destroy, and many times over. In fact, each U.S. nuclear-armed submarine carries seven times the destructive power of all the bombs dropped during World War II, including the two atomic bombs dropped on Japan.

**The scope of the mistake.** Coming from a Biden administration that pledged to seek to reduce the role of nuclear weapons, with a president who, as a candidate for office, declared his support for the policy that the United States would never use nuclear weapons first in any conflict, the decision to pursue the B61-13 is not only deeply disappointing, but a profound mistake. In short, the B61-13 is yet another sign that the United States intends to make its nuclear arsenal even more deadly and the foundational element of the existing security system. That system is based on the principle that this country, to keep itself “safe,” needs to be able to kill tens or hundreds of millions of people in less than an hour.

On moral grounds, and under international law, that prospect alone should be evidence enough to conclude that such an approach to security is grievously wrong, and that the United States should do everything it can to move away from that system. But the reality is far worse, because Russia already has and China is now moving toward nuclear arsenals that will give them similar capabilities. Even with their vastly smaller arsenals, the other six nuclear weapons states — the U.K., France, India, Pakistan, Israel, and North Korea — also have the capacity to kill tens of millions of people in hours. That horrible reality is the basis of the world’s security system. If everyone can kill everyone else, and no one can be safe from that threat, then — in the supreme irony of nuclear deterrence — everyone is supposed to be safe.

The mutual assured destruction precept of deterrence theory is ludicrous. For such a system to make sense, it would have to work perfectly and for all time. If it doesn’t, then we are all dead. What human system has ever worked perfectly for any significant length of time? In just one example of far too many, nuclear war was barely averted when a Russian officer refused to go along with two colleagues who wanted to use a nuclear-armed torpedo against U.S. Navy ships harassing their submarine at the height of the Cuban Missile Crisis. As has been noted, it was as much luck as careful choices that avoided the start of a nuclear war that would almost certainly have spiraled out of control.

Rather than develop a new nuclear weapon that adds fuel to a rapidly growing arms race, the Biden administration should launch a concerted effort to rid the world of nuclear weapons. It should publicly announce this intention, invite representatives from other nuclear-armed states to the table, and begin talks about what would be required to eliminate nuclear weapons from Earth. In an ideal world, we could turn the tragedy of the B61-13 into the launching point for a global effort to push for that outcome.

– *Bulletin of the Atomic Scientists, February 13, 2024*

## **Germany debates nuclear weapons, again. But now it’s different.**

Ulrich Kühn

Germans are debating nuclear deterrence—again. They did so when U.S. President Donald Trump won the White House in 2016; when he almost wrecked a NATO Summit in 2018; when French President Emmanuel Macron offered Europeans a strategic nuclear dialogue in 2020; and when Russia invaded Ukraine in 2022. Now that Trump, poised to be the Republican candidate to this year’s presidential election, has casually threatened not to come to the defense of NATO allies should one of them be attacked, Germans cannot help but look for deterrence alternatives again — including nuclear weapons.

But why would one worry since these musings come and go without any noticeable consequences? Well, there are consequences, and a perfect storm is now brewing in Berlin, one that might ultimately blow away the last remains of Germany’s once deeply ingrained identity of a “civilian power.”

What are Germans debating exactly? As I argue in a new book I edited, Germany is both security dependent and

politically conservative. The country depends on the United States and a somewhat benevolent security environment to balance its competing interests in deterrence and disarmament. Its political conservatism leads German decision-makers to preserve as many as possible of these interests, even if external conditions change significantly. The combination of dependency and conservatism can ultimately result in inertia, tying German leaders’ hands and making the country appear indecisive and anxious.

Today, fear is palpable as Germans are debating a question that sounds like it was taken right from the early Cold War playbooks: What if the United States abandons Europe in face of a Russian aggression? In this debate, Germans quickly come up with answers: (1) a somewhat Europeanized deterrent, based on French and British nuclear forces, (2) Germany co-financing the French strike force in exchange for greater security assurances from Paris, or (3) a German bomb.

In all this, Germans still do not bother to discuss plausible proliferation strategies, including their costs and risks. Instead,

hilarious proposals are making the rounds in Germany's most-read newspapers. One such proposal suggests a "Eurobomb," with the nuclear command-and-control suitcase constantly "roaming" between E.U. capitals. Another recommends that Europeans immediately buy 1,000 "nonactive" U.S. strategic warheads and missiles in conjunction with Germany revoking its membership in the Treaty on the Prohibition of Nuclear Weapons, also known as the ban treaty, which Germany never signed.

What is perhaps most striking is that no one in Germany dares to ask whether any of these proposals would ultimately make Germany — and Europe — any safer. As Barbara Kunz, an expert on French security policy, and I wrote: "[T]he thinking [in Berlin] seems to be based on a relatively simplistic approach where nuclear weapons equal deterrence, which equals more security. Accordingly, possessing the bomb serves as some sort of life insurance, simply by the fact that the bomb is there. The fact that the reality of nuclear deterrence is obviously more complex ... plays no role in the German debate."

What's different this time? The latest iteration of the German nuclear debate nevertheless shows some key differences from previous ones. First, it takes place in a European security environment that has moved much closer to the scenario of U.S. abandonment and Russian aggression than most assumed back in 2016, when Trump rattled Europeans for the first time. As a consequence, proliferation chatter is not an exclusively German specialty anymore. Most notably, Polish leaders, including President Andrzej Duda and new Foreign Minister Radoslaw Sikorski, have publicly mused about nuclear weapons other than the United States'.

Second, while the early German nuclear debates featured mostly pundits, journalists, and some political backbenchers, those who now favorably discuss deterrence alternatives increasingly include current and former heavyweights from across the political spectrum. They include Friedrich Merz, Wolfgang Schäuble, and Manfred Weber from the Conservatives, Sigmar Gabriel and Katarina Barley from the Social Democrats and the Greens. When Germany's Finance Minister Christian Lindner from the Free Democrats joined the chorus in mid-February, Chancellor Olaf Scholz finally had to put his foot down: He reminded his fellow coalition partner that "Germany decided a long time ago not to seek its own nuclear weapons."

Third, nuclear disarmament — a central pillar of post-Cold War German foreign and security policy — does not play a role in the German public discourse any more. When in March 2022 Annalena Baerbock, Germany's Foreign Minister from the Greens, urged Germans in response to Russia's aggression against Ukraine to "understand disarmament and arms control as being complementary to deterrence and defense," everyone in Berlin got the point. A recent comparative analysis of Bundestag statements found that the word "disarmament" barely showed up in parliamentary debates in 2022 — a stark difference with previous years. Prior iterations of the German nuclear debate had seen multiple expert interventions in favor of disarmament and arms control policies. But these voices have mostly gone silent now.

Fourth, a newfound hawkishness has come to dominate the German media discourse. Fueled by a few dozen hardline think tankers and politicians, restraint — in every form, including the obvious limitations of a mutual deterrence relationship with Russia — is considered weak and a sign of fear of Russia. "Self-deterrence" is the main charge levelled against Scholz to dismiss every consideration of potential escalation pathways vis-à-vis Russia.

All this happens on the back of a shift in public opinion. Latest surveys show that Germans see nuclear weapons much less negatively than in the past. In a poll conducted by German pollster Infratest-dimap in mid 2022, for the first time in decades a majority of respondents said they welcomed U.S. nuclear weapons deployed on German soil. When the German nuclear debate kicked off in 2016, nuclear skeptics could still claim that the entire discussion was out of touch with Germans' long-standing preference for nuclear abolition. Today, that is no longer a clear-cut case.

What's next? So far in the debate, the shifting parameters have not gone so far as to lead the government to pursue any visible changes to Germany's deterrence arrangements. No less important, 90 percent of Germans reject the notion that the country should have its own nuclear weapons. The combination of Germany's security dependence and political conservatism, however, might lead to difficult choices ahead.

A reelection of Trump and subsequent policy changes in U.S. nuclear guarantees to European allies could lay bare the obvious downsides of German dependency. At the same time, German conservatism could force the country to search for deterrence alternatives in such a scenario.

For nearly 70 years, Germany has relied on extended U.S. nuclear deterrence for its security, with successive German governments — including Conservatives, Social Democrats, Free Democrats, and Greens — showing their continued support. Suggesting that Germany would break with that tradition and get rid of nuclear deterrence altogether should Trump withdraw U.S. nuclear weapons from Europe hardly seems realistic. Rather, Germany would more likely probe Paris and London for increased nuclear commitments to Europe's security.

But should this probing fail — and current rifts between the countries over arms deliveries to Ukraine and military secrecy are not a good omen — Berlin may indeed face the toughest of all decisions about ensuring its own security. Over the years, the recurring German debate about nuclear weapons has pushed the boundaries of what is conceivable in German politics consistently closer to the atom.

— edited from *Bulletin of the Atomic Scientists*, March 15, 2024

"Such a weapon [the hydrogen bomb] goes far beyond any military objective and enters the range of natural catastrophes. By its very nature, it cannot be confined to a military objective but becomes a weapon which, in practical effect, is almost one of genocide. ... It is necessarily an evil thing considered in any light."

~ Enrico Fermi and I. I. Rabi, *Manhattan Project physicists*

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