A distinction must be made between lessons learned and fighting yesterday’s war. The French experience in World War I led to the construction of the Maginot Line series of fortifications. The French neglected to adapt to changes in the operational environment, and their monolithic method for deterrence, based on established convictions that the next war would be similar in critical aspects to World War I, failed.
catastrophically during World War II. The United States risks a similar misappraisal of the operational environment in how it understands, plans, and executes nuclear deterrence.

The 2018 Nuclear Posture Review (NPR) clearly lays out the challenge: “This rapid deterioration of the threat environment since the 2010 NPR must now shape our thinking as we formulate policy and strategy, and initiate the sustainment and replacement of U.S. nuclear forces.” However, an examination of the NPRs since 1994 demonstrates the Nation’s reliance on legacy nuclear deterrence concepts despite changes in the operational environment; that reliance, when juxtaposed against a current understanding of U.S. nuclear threats, exposes a wide “say-do” gap between stated deterrence policy and deterrence in practice. The United States must eliminate its nuclear deterrence say-do gap by operationalizing the 2018 NPR through the development of doctrinal and operational concepts that enable the joint force to acquire and integrate a broad variety of deterrence activities and capabilities, ultimately delivering the tailored and flexible deterrence posture needed to succeed in the 21st century.

Atrophy of U.S. Nuclear Conceptual Thinking: 1994 to Present

The operational environment before the fall of the Soviet Union differed from the one the United States faces today. Whereas the Nation chiefly contended with mutually assured destruction in the former, it now faces multiple actors of concern that present unique threats across the spectrum of conflict—with each one deterred in a different way. An analysis of the 1994, 2001, and 2010 NPRs clearly illustrates this transition and contrasts with the 2018 NPR assertions that seek to remedy the decline within U.S. nuclear force doctrines and capabilities.

The post–Cold War’s optimistic caution underpinned the 1994 NPR. The United States accommodated reductions in its nuclear arsenal, accompanied by the so-called peace dividend. Mild successes in nonproliferation and disarmament also marked the first half of this decade. Without an aggressive nuclear adversary and with the perception of a more stable nuclear operational environment, the 1994 NPR advocated a “Lead but Hedge” strategy. In other words, the United States would lead the world in nonproliferation and arms reduction efforts, while also hedging against future uncertainty by retaining what it considered adequate nuclear deterrence capability under the assumption of a more benign security environment compared to the Cold War era. Figure 1 illustrates the Nation’s ambitious focus on arms reduction via the first Strategic Arms Reduction Treaty.

This trajectory remained largely unchanged in the 2001 NPR, despite obvious shifts in the operational environment. As observed by Senate Foreign Relations Committee members regarding the 2001 NPR, potential U.S. adversaries changed, but post–Cold War strategic objectives remained the same. The continued marginalization of nuclear deterrence led to the formulation of the “New Triad,” which affirmed efforts to reduce nuclear capabilities and aspired to increase conventional capacities. Additionally, this strategy shifted away from the previous threat-based employment guidance and transitioned to a capabilities-based approach in defense planning. The critical shortcoming of adopting the capabilities-based approach was the development of generic capabilities and doctrine, which proved incongruous with the gradual reemergence of peer and near-peer competitors.

The 2010 NPR aimed to further reduce U.S. national security policy reliance on nuclear weapons. Indeed, it trumpeted the fact that the United States and Russia reduced operationally deployed strategic nuclear weapons by approximately 75 percent from Cold War levels. While U.S. policy shifted further away from nuclear deterrence—with its attention still fixated on executing two lower intensity conflicts—Russia, China, and North Korea advanced their operational concepts and developed new or enhanced capabilities. While the United States delayed modernizing its nuclear inventory, other global competitors seized the initiative.

U.S. thinking about deterrence stagnated and regressed, evidenced by a lack of joint doctrine on nuclear operations from 2006 to the present. The United States has attempted to execute deterrence largely the same way since the Cold War, with the presumption that our Cold War-era doctrine and concepts would suffice with the grave exception of devaluing its role. The implicit danger of failing to
rethink doctrinal concepts is the assumption that they will continue to work in the future. Per strategist and theorist Colin Gray, correlation is not causality, and the greatest non-event in history is not necessarily proof that our previous deterrence concepts worked.14

The Competitive Space
What academic circles have termed the “Second Nuclear Age” largely describes the nuclear power vacuum created by continued U.S. deemphasis of nuclear operations. Among the numerous actors of concern, Russia, China, and North Korea stole the opportunity and advanced their nuclear operational concepts and capabilities.18 Since 2010, despite decades of U.S. leadership to reduce the number and role of nuclear weapons on the geopolitical stage, other international actors moved in the opposite direction, presenting an “unprecedented range and mix of threats” that left the United States in an operational nuclear lurch.16 While the Nation identified the need to recapitalize its strategic nuclear forces, a critical gap exists at the operational level with limited numbers of low-yield nuclear weapons intended for use on the battlefield. Figure 2 illustrates this disparity.

**Russia.** Russia poses the greatest near-term and existential threat to America.17 Moscow capitalized on the last 15 years, modernizing nuclear operations and equipment for achieving its aims through a variety of methods, including nuclear coercion. It violated the Intermediate-Range Nuclear Forces Treaty in 2014 by fielding a new road-mobile missile and recently began fielding its most capable missile, the RS-28 Sarmat, which Western analysts call the Satan-2. President Vladimir Putin boasted that Russian advances in nuclear technology were unmatched and unprecedented in world history.18

The 2018 NPR clearly highlights the challenge posed by Russia: “Most concerning are Russia’s national security policies, strategy, and doctrine [emphasizing] the threat of limited nuclear escalation, and its continuing development and fielding of increasingly diverse and expanding nuclear capabilities.”19 This concept is called “escalate to deescalate,” whereby Russia would seek to employ a low-yield nuclear attack in such a fashion as to make a proportional U.S./North Atlantic Treaty Organization (NATO) response politically unacceptable or impractical.20 In this sense, the deescalation would be the result of Western “capitulation on terms favorable to Moscow.”21

In turn, U.S. and NATO reliance on the air-delivered B61 gravity bomb for in-theater (operational level) nonstrategic nuclear deterrence highlights the dilemma posed by the potential lower nuclear first-use threshold. In order to deter and respond to the potential use of nonstrategic nuclear weapons by Russia, the United States and NATO can only counter with fourth-generation Western fighter aircraft against highly capable
Russian integrated air defense systems.\textsuperscript{22} In short, Russia clearly understands and exploits this existing gap.\textsuperscript{23}

China. Largely shrouded in ambiguity, China’s expanding nuclear deterrence doctrines and capabilities pose a serious strategic challenge for how the United States conducts nuclear deterrence. In 2016, President Xi Jinping elevated China’s Second Artillery Corps, in charge of land-based nuclear forces, to become its own service, the People’s Liberation Army Rocket Force, which consolidated command and control over all nuclear forces. This is problematic for several reasons.

Coupled with its newly streamlined command and control structure, China’s lack of transparency regarding the “scope and scale of its nuclear modernization program raises questions regarding its future intent.”\textsuperscript{24} In broad terms, “it is developing and testing several new classes and variants of offensive missiles, forming additional missile units, upgrading older missile systems, and developing methods to counter ballistic missile defenses.”\textsuperscript{25}

The quantity of these new weapons systems is also ambiguous, with estimates ranging from a few hundred to a few thousand.\textsuperscript{26} It raises the question of why a country with a “no first use” policy would seek to place greater emphasis on creating a shorter kill chain with more advanced weaponry.

Uncertainty concerning Chinese nuclear capabilities, doctrine, and concepts also creates further concern when viewed in context with its other geopolitical actions. These include the claims on, creation of, and militarization of man-made islands in the South China Sea, the broader coercion by diplomatic and economic means of its neighbors, and the aggressive intellectual property theft of American/Western military-industrial knowledge.

North Korea. At the June 12, 2018, summit between the United States and North Korea, the heads of state reaffirmed the April 27, 2018, Panmunjom Declaration that committed North Korea to work toward complete denuclearization of the Korean Peninsula. As long as North Korea continues to possess nuclear weapons in any number, a very real and present danger still persists.\textsuperscript{27} With its economy largely dependent on its relationship with China, the much more impoverished North Korea views its possession and pursuit of nuclear weapons capabilities as existential to the preservation of the Kim Jong-un regime.\textsuperscript{28}

Assuming that North Korea does not dismantle its nuclear enterprise in the near future, there are inherent difficulties in shaping its behavior. The United States spent the better part of the last two decades attempting to end North Korea’s nuclear weapons program through sanctions, frameworks/agreements, and United Nations Security Council resolutions, which all sought to coax or coerce North Korea into arms reduction in exchange for goods, energy, and food. In each instance, North Korea balked and restarted its programs with limited repercussions. If left unchecked, North Korea will continue to threaten the East Asia region and perhaps one day the United States itself.

In response to North Korean missile testing, Japan and South Korea reportedly considered “the nuclear option, driven by worry that the United States might hesitate to defend the countries if doing so might provoke a missile launched from the North at Los Angeles or Washington.”\textsuperscript{29} Former Secretary of State Henry Kissinger echoed this sentiment of potential proliferation: “If they continue to have nuclear weapons, nuclear weapons must spread in the rest of Asia.”

\textbf{Operationalizing the 2018 NPR}
The United States must act quickly if it seeks to regain and maintain a qualitative conceptual edge over its adversaries. A sober appraisal of past nuclear thinking combined with deliberate U.S. neglect of its nuclear forces serve as the catalyst for the 2018 NPR’s admission that “the United States now faces a more diverse and advanced nuclear-threat environment than ever before, with considerable dynamism in potential adversaries’ development and deployment programs for nuclear weapons and delivery systems.”\textsuperscript{30} As such, the United States must develop tailored and flexible operational concepts to ensure effective deterrence against a range of potential 21st-century actors of concern. Failure to act decisively and formulate the necessary concepts and associated capabilities to operationalize this strategy will create gaps in the U.S. extended deterrence

\begin{figure}
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\includegraphics[width=\textwidth]{Figure2.png}
\caption{Nuclear Delivery Systems Employed or in Development since 2010}
\end{figure}
ballistic missile defenses and traditional
capabilities. The United States should also
consider the ability to rapidly deploy
defense capabilities to mitigate the
Russian numerical advantage in nonstra-
tegic nuclear weapons.

China. The 2018 NPR expresses the
Nation’s tailored strategy for China in
broad terms. In essence, the mere pos-
session of nuclear weapons with multiple
options should allow for flexibility and
therefore suffices as effective deterrence.32
However, what should be antecedent
to, or at the very least concurrent with,
this approach seems to be mentioned
only in passing.33 Because of China’s
deliberate opacity regarding its nuclear
weapons programs, a lion’s share of effort
must be dedicated to penetrating this
lack of transparency, which will provide
higher fidelity for U.S. options while also
mitigating the increasingly intense geo-
political dynamic in East Asia.

Remarking on the 2018 NPR,
Chinese government spokesmen derided
the idea that its nuclear weapons program
should cause any concern for U.S. inter-
est.34 However, this discord may be born
from a lack of mutual understanding as
speculated in the following:

As far as China is concerned, what is
important is ensuring that it has the
technological leeway to avoid being caught
off guard by new innovations. Yet U.S.
scholars cannot fully comprehend this way
of thinking, and China and the United
States have almost never engaged in any
serious dialogue about it.35

In any case, the United States must
close this gap and stabilize its relation-
ship with China. In lieu of any progress
made on the political front, more fully
incorporating and advancing U.S. bal-
listic missile defenses and exploiting
new strategic intelligence capabilities
may prove to be an effective stopgap
measure against China’s nuclear
weapons modernization.

North Korea. Developing operational
concepts to deter North Korea poses
unique challenges for the United States
and its regional partners. One weakness
that can be exploited is North Korea’s
limited number of nuclear-capable theater
and intercontinental ballistic missiles. In
this nontraditional view of deterrence,
the United States should seek to employ
a sufficient number of ballistic missile
defenses in the region not only to reduce
the risk from North Korean nuclear at-
tack but also to visibly demonstrate to the
Kim regime that the United States has a
sufficient number of interceptors to neu-
tralize North Korea’s nuclear threat.

Furthermore, the United States
should strongly consider a potentially
controversial new concept involving
custodial sharing of nonstrategic nuclear
capabilities during times of crisis with
select Asia-Pacific partners, specifically
Japan and the Republic of Korea. As
with NATO, the United States would
maintain ownership of these weapons,
ensuring that the stipulations in the
Non-Proliferation Treaty signatories
remain in effect. Also, the construct
will not mirror the NATO model for
nonstrategic nuclear employ due to
polito-military restrictions. This would
have an added deterrent effect on North
Korea, but perhaps the greatest advan-
tage would be the increased pressure put
on China to constrain North Korea’s
aggression.

The forward presence of nonstrategic
nuclear capabilities in East Asia provides
an additional advantage through demon-
strating greater assurance to U.S. regional
allies. Considering North Korea’s his-
tory of aggressive nuclear rhetoric and
recent missile tests, combined with the
deliberate U.S. deemphasis of nuclear
deterrence in national policy, this course
of action would provide renewed physical
evidence of U.S. resolve. It would also
provide another avenue for collaboration
and strengthening military partnerships
through joint-regional exercises, all of
which are necessary to deter potential
adversaries and reassure allies.

Conclusion
On the surface it may seem that U.S.
leadership in nuclear arms control and
nonproliferation is altogether positive,
but there have been several costly side
effects. As each NPR demonstrated, the
diminished U.S. nuclear posture also
served to marginalize its nuclear forces,
resulting in several scandals that could
have ended with catastrophic conse-
quences. Meanwhile, the operational environment changed drastically, where several actors of concern took advantage of the permissive U.S. attitude as an opportunity to advance their nuclear arsenal, thereby lessening the effectiveness of U.S. nuclear deterrence. As outlined in the 2018 NPR, however, the United States seems to recognize that it is at an inflection point. The United States seems to recognize that it is at an inflection point.

Critics of these recommendations may likely take issue with some of the specific proposals advocated herein. A potential criticism involves the perceived moral aversion to development and integration of new nonstrategic nuclear weapons into a broader deterrence framework. Regardless of the perceived morality attached to nuclear weapons, the threat of nonstrategic nuclear weapons must be real and credible to ensure robust deterrence. Concerning the threat of nonstrategic nuclear weapons, the potential criticism of including these weapons in exercises, the United States regularly integrated them into large-scale exercises during the Cold War. Only the perception of the benign strategic environment described in previous NPRs induced the United States to cease broader incorporation of nonstrategic nuclear weapons, as well as to stop developing new capabilities that would fill the current gap. Finally, a criticism that adopting the assertive posture advocated by the 2018 NPR is destabilizing fails to provide an alternative solution to lower the risk of nuclear exchange during a conflict.

In order to defend its vital interests and reassure its allies, all while hedging against an uncertain future, the United States must maintain a credible nuclear deterrent capability and the ability to convince potential adversaries of its resolve to employ those capabilities when required. The United States must eliminate its nuclear deterrence “say-do” gap by operationalizing the 2018 NPR. As such, the development of operational concepts tailored to these specific threats rather than a generic and irrelevant capabilities-based doctrine will enable the United States to truly operationalize the 2018 NPR.

Notes
11 Ibid., 13.
13 Joint Publication 3-12, Nuclear Operations, was rescinded in 2006 and renamed Cyberspace Operations. There is no current joint publication for nuclear operations.
16 Ibid., 2.
20 James Quinlivan and Olga Oliker, Nuclear Deterrence in Europe (Santa Monica, CA: RAND, 2011), 36.
23 “Presidential Address to the Federal Assembly.”
31 Ibid., 55.
32 Ibid., 32.
33 Ibid.