

## Thinking Anew about US Nuclear Policy toward Russia

One of President Donald Trump's first actions after entering office was to direct Secretary of Defense James Mattis to "initiate a new Nuclear Posture Review to ensure that the United States nuclear deterrent is modern, robust, flexible, resilient, ready, and appropriately tailored to deter 21st-century threats and reassure our allies."<sup>1</sup> Secretary Mattis has since reportedly directed that the new Nuclear Posture Review (NPR) be completed in six months.<sup>2</sup> This new 2017 NPR will be the fourth in a series, following the 1994, 2001, and 2010 NPRs. There has been both significant consistency in these previous NPRs and some significant innovations.<sup>3</sup> The forthcoming NPR will confront two overarching questions: First: what are the changes in the security environment since the 2010 NPR? And, second, what do these changes suggest regarding US policies and requirements? The discussion here focuses only on Russia, but there are important parallels with regard to US-Chinese relations and our allies in Asia that are worthy of serious consideration.

### The New World Disorder

The most fundamental starting point is to recognize that threat conditions have worsened dramatically since the 2010 NPR. Each of the three previous NPRs presumed a more benign new world order in which nuclear weapons and deterrence would play a declining role. The predominant view has been that the post-Cold War world is moving away from nuclear weapons and that nuclear deterrence is increasingly irrelevant to US relations with Russia and China.<sup>4</sup> It is difficult to overstate the certainty that has attended this worldview or the significance of the nuclear policy directions it has inspired. The expectation of this more benign new world order corresponded to the conclusions that US nuclear forces and nuclear deterrence were of greatly declining value and that US nuclear policy should address, first and foremost, priorities other than deterrence. The 2010 NPR identified the highest priority goals of US nuclear policy as addressing the threat of nuclear terrorism

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and promoting nonproliferation and nuclear disarmament. The progressive reduction of US nuclear forces and their roles was linked to advancing these priorities.<sup>5</sup> The overarching US nuclear policy direction that followed from these beliefs has been that the salience and number of nuclear weapons should be lowered on a continuing basis.

Unfortunately, it is now clear that the expected more benign new world order has been overtaken by reality,<sup>6</sup> including particularly blatant Russian and Chinese actions to overturn the existing political order in Europe and Asia respectively and the decade-long expansion of nuclear capabilities pursued by both Moscow and Beijing. Today's stark reality is demonstrated by Russia's call for a new "post-West" world order,<sup>7</sup> its continuing aggression against Ukraine, and explicit nuclear first-use threats against NATO states and neutrals.<sup>8</sup> The Putin regime has sought repeatedly to coerce the West with threats of nuclear first-use employment. According to Russian military writings and exercises, as reported, the West is expected to concede in the face of Russian nuclear escalation threats or limited nuclear first use.<sup>9</sup> The former commander of US European Command, Gen Philip Breedlove, USAF, retired, has emphasized this Russian perspective regarding the role of nuclear weapons and the marked difference between Russian and Western views:

NATO policymakers and planners must recognize that their Russian counterparts view nuclear weapons as practical tools for gaining tactical advantage on the battlefield, escalation control, and for intimidation during conflict termination: Russian views on the utility of nuclear weapons are a sharp departure from most Western thinking and thus represent a potentially dangerous risk during a crisis. The more Russian decision-makers believe this gap in perceptions exists, the more tempted they could be to threaten the use of nuclear weapons during a crisis, or actually employ them.<sup>10</sup>

Correspondingly, Russia is not interested in limiting its theater conventional or nuclear forces and has deployed a nuclear-capable cruise missile, reportedly the SSC-8, in direct violation of the 1987 Intermediate-Range Nuclear Forces (INF) Treaty.<sup>11</sup> According to Col Gen Sergei Ivanov, then-Kremlin Chief of Staff, Russia has little incentive for further nuclear arms control negotiations with the United States because Russian systems "are relatively new" while the United States has "not conducted any upgrades for a long time."<sup>12</sup> While this is an overstatement, it is true that until recently US nuclear modernization has been on a hiatus for decades.<sup>13</sup>

Russia's coercive nuclear threats and reported planning for nuclear first use presents a profound new challenge for Western deterrence and assurance strategies.<sup>14</sup> Russia now brandishes nuclear strike capabilities, including long-range capabilities, for coercive purposes, including, as a recent report by the Joint Chiefs of Staff states, "to change the decision calculus of [US] leaders or the public's appetite for foreign military operations." Indeed, the Joint Chiefs of Staff recently released its Joint Operating Environment 2035 report, which states:

Over the next two decades, there will be a significant evolution in long-range strike weapons capable of ranging the U.S. homeland. . . . The purpose of state adversary investments in global strike assets capable of reaching North America is to threaten key targets within the United States during a conflict. . . . Adversaries will threaten the homeland not to physically destroy the United States, or even in anticipation of materially hindering its economic or military potential, but rather to change the decision calculus of leaders or the public's appetite for foreign military operations.<sup>15</sup>

This reality takes aim at the heart of US deterrence and assurance goals and strategies. It is not speculation about some dark future; this challenge is emerging here and now.<sup>16</sup> In response, some commentators in Europe, including in Germany, are discussing an independent nuclear "Euro-deterrent."<sup>17</sup> NATO's deputy supreme allied commander, Sir Adrian Bradshaw, describes the current threat context in stark terms: "The threat from Russia is that through opportunism and mistakes and a lack of clarity regarding our deterrence we find ourselves sliding into an unwanted conflict which has existential implications."<sup>18</sup>

These are the unfolding threat realities of the post-Cold War security environment, and they present both familiar and unprecedented challenges for US deterrence and assurance goals. Consequently, priorities for the forthcoming US Nuclear Posture Review should include: identifying Russian goals and strategy, explaining why Moscow believes it has exploitable advantages that now enable it to change the post-Cold War order and issue coercive nuclear first-use threats, and identifying in light of those goals and beliefs steps that the West should undertake to strengthen its deterrence of Moscow and assurance of allies.

## **Russian Goals**

First, based on open Russian leadership writings and speeches over the years, it is clear that Moscow is driven to correct what it perceives to be

the geopolitical injustices forced on it by the West in Russia's post-Cold War time of weakness. President Vladimir Putin famously called the collapse of the Soviet Union the greatest catastrophe of the twentieth century<sup>19</sup> and sees in it a legacy that must be corrected. Moscow believes that the West has pushed Russia too far and has further highly aggressive designs against Russia, including regime change. Consequently, the Putin regime is rearming Russia and changing European borders with the expressed goal of overturning the current post-Cold War settlement and restoring Russia's power position. This combination of Russian goals and perceptions makes friction with the West inevitable: it carries the potential for high-stakes conflict and even escalation to nuclear use.

### **Russian Perceptions of Exploitable Advantage**

Russia believes it has exploitable advantages of military capability and political will that undergird its goal of overturning the status quo. Significantly, it appears to doubt NATO's resolve to resist if Russia poses the threat of war and nuclear coercion. In addition to its apparent skepticism regarding NATO's resolve, Moscow's self-image threatens deterrence in Europe and understandably frightens US allies. A related theme in Russian writings is Moscow's apparent belief that Russia has exploitable nuclear and conventional force advantages over the West. These include greater, immediately available local conventional force capabilities and readiness. President Putin has boasted that he can have Russian troops in five NATO capitals in two days.<sup>20</sup> These advantages perceived by Russia also include nuclear escalation options. Given Russian skepticism about the West's will to resist, Moscow appears to believe its escalation of a conflict will leave NATO with no credible response options. The commander of the US European command, Gen Curtis Scaparrotti, recently observed, "Most concerning, however, is Moscow's substantial inventory of non-strategic nuclear weapons in the [European Command area of responsibility] and its troubling doctrine that calls on the potential use of these weapons to escalate its way out of a failing conflict. Russia's fielding of a conventional/nuclear dual-capable system that is prohibited under the INF Treaty creates a mismatch in escalatory options with the West."<sup>21</sup>

The difference today, of course, is that NATO frontline states are former parts of the Soviet Union or former members of its Warsaw Pact. This point may be extremely significant because cognitive studies typically

conclude that humans will accept greater risk to recover a value considered unfairly lost than to acquire a new gain.<sup>22</sup> The leadership in Moscow clearly believes the West has inflicted great losses on Russia that must be recovered. This point suggests the considerable challenge of deterring the Russian leadership in this second nuclear age and that Western Cold War approaches to deterrence are incomplete guides for contemporary deterrence strategies. I am not suggesting here that Russia wants war or is cavalier about the prospect of nuclear war. Rather, Moscow appears to feel privileged to take aggressive positions against the West given its perception of exploitable asymmetries in capability, resolve, and readiness to risk war. This perception is key to the potential for deterrence failure in Europe and the growing need to further assure threatened allies. Just how much freedom Russia believes it has to expand its position aggressively and how it will act with that freedom likely depends on Moscow's calculations of NATO's determination, readiness, and power to resist. That is a calculation the West can affect by its statements, capabilities, and actions. For example, some commentators assert that the Putin regime has dangerous designs on the Baltic states; others say it has no such designs. My point is that there probably is not a fixed answer to this question regarding Russia's readiness to act on its aspirations and perceptions of advantage. Rather, the Putin regime is pragmatic—and thus the West can act to limit Moscow's agenda and actions vis-à-vis the Baltic states and elsewhere. This possible constraint on Moscow's ambitions and moves is one that makes Russia today different from Hitler's Germany of 1939 and is why strengthening NATO's deterrence position now is so critical.

### **US Policies to Strengthen Deterrence and Assurance**

What are the implications of these realities for Western deterrence and assurance strategies and requirements? The most basic need is to end Russia's misperceptions that its capability, resolve, and readiness to break the West at the risk of war are greater than the West's capability, resolve, and readiness to prevent it from doing so. Prudently addressing this need for deterrence and assurance purposes demands US policies and forces that are of sufficient size and flexibility to adapt as necessary to an increasingly hostile and dynamic nuclear threat environment.<sup>23</sup> That fundamental principle and metric for defining US adequacy is very different from the previous dominant post-Cold War policy direction,

which sought largely to reduce and constrain US nuclear capabilities on a continuing basis to serve a different set of priority goals. This new principle mandates that the decisive question now is “how much capacity is enough” rather than how rapidly can the United States further reduce nuclear forces so as to advance the highest priority goals of nonproliferation and nuclear zero.<sup>24</sup>

Helpful in this regard would be consistent, resolute, alliance-wide declaratory policies along with relevant exercises that signal a message of resolve to Moscow that the United States and NATO will not prove wobbly, even under Moscow’s coercive nuclear threats. To wit, for deterrence purposes, the West must deny Moscow any expectation of an exploitable advantage in political will, nuclear threats, or nuclear escalation. A useful example of a helpful declaratory policy was provided in 2016 by then-new British Prime Minister Theresa May. When asked in Parliament if she would ever authorize a nuclear strike given the dangers involved, she responded yes without hesitation. May added, “The whole point of a deterrent is that our enemies need to know that we would be prepared to use it. . . . We must send an unequivocal message to any adversary that the cost of an attack on our United Kingdom or our allies will be far greater than anything it might hope to gain.”<sup>25</sup> No doubt Moscow paid considerable attention to that unambiguous deterrence signal.

The interaction between increased Western nonnuclear defense preparedness in Europe and the perceived credibility of the West’s nuclear deterrent is important. In response to Russian threats and expansionism, Western efforts to deploy high-readiness, nonnuclear defensive capabilities to protect NATO frontline states from a Russian military *fait accompli* will likely reduce Moscow’s perceptions of exploitable advantage and also strengthen the credibility of US extended deterrence commitments. Why? Because doing so will help deny Moscow’s perceptions of an easy Russian *fait accompli* and demonstrate united Western resolve to put itself on the line for this cause. The West understood this point well during the Cold War. To use Cold War terms, a NATO conventional tripwire or plate-glass door that is understood by Moscow to lead to intolerable loss if it should attack and escalate can be of great value for deterrence. But, Estonian President Kersti Kaljulaid recently observed that NATO now needs more than “just a tripwire” to make “our deterrent believable.”<sup>26</sup> The Lithuanian defense minister has similarly said that NATO must improve its reaction time and add “more capability,

and not only land troops but also air defenses and capabilities to counter any blockade.”<sup>27</sup>

The level of additional, forward-deployed NATO defensive capability needed for this deterrent purpose is an important question with no obviously correct, precise answer. Lt Gen Valery Zaparenko, a former deputy chief of the Russian general staff, commented recently in this regard, “You can’t deter much with a few battalions.”<sup>28</sup> A pertinent 2016 RAND study concluded: “Having a force of about seven brigades, including three heavy armored brigades—adequately supported by airpower, land-based fires, and other enablers on the ground and ready to fight at the onset of hostilities” might provide an adequate initial deterrent.<sup>29</sup>

Because Moscow views nuclear escalation as an exploitable threat or act—based in part on its perceived ability to control escalation to its advantage—the West’s deterrence and assurance strategies can neither escape the nuclear dimension nor be limited to in-theater capabilities. There are no solely nonnuclear or wholly local fixes that can fully address NATO’s deterrence and assurance need to counter apparent Russian perceptions of exploitable advantage. However, as former Defense Secretary Leon Panetta recently observed, in some cases credible deterrence demands that the United States “make it very clear” that “we will respond in kind.”<sup>30</sup> Some Western steps to undertake or consider in this regard include the following:

- Modernizing the US nuclear triad, to include some very low-yield options on accurate US strategic missile systems,<sup>31</sup> and strengthening command-and-control systems.
- Deploying US national missile defense capabilities sufficient to deny any opponent a plausible strategy of coercing Washington via threats of limited nuclear attack<sup>32</sup> (this step is essential if only given the emerging North Korean ICBM threat to the United States<sup>33</sup>).
- Advancing the delivery date of the nuclear-capable F-35 and B61-12 combination.<sup>34</sup>
- Having capabilities to hold at risk hard, deeply buried targets.
- Increasing NATO dual-capable aircraft (DCA) survivability and readiness.<sup>35</sup>
- Expanding DCA burden sharing among allies by involving more allies in important nonnuclear activities related to NATO’s nuclear

deterrent and possibly by inviting personnel from additional NATO states to serve as DCA pilots.

- Ensuring that NATO conventional forces can survive and fight in the context of limited Russian nuclear escalation.
- Increasing the active and passive defense of key NATO nodes and assets against conventional and nuclear strike.
- Ensuring the capability to penetrate advanced defensive systems such as the Russian S-500.
- Expanding Western nonstrategic nuclear deterrent options, possibly including a nuclear-capable SLCM and/or a nuclear-capable F-35C.

The development of “new” US nuclear capabilities should not be ruled out peremptorily by policy.<sup>36</sup> At the same time, increased US nuclear force numbers may well be unnecessary. But some plausible nuclear capabilities could help reduce Moscow’s perceptions of exploitable advantages. Some commentators suggest that any “new” US nuclear capability would likely upset the delicate domestic political consensus in favor of US nuclear modernization and thus must be rejected.<sup>37</sup> This domestic political concern may be valid and an important consideration, but any review of emerging policy and force needs must at least identify all those steps that could serve to strengthen deterrence and assurance—even if a subsequent political decision might avoid some such steps given anticipated domestic political costs. The possible cost of a decision to forego a potentially helpful capability for fear of domestic political reactions must at least be understood and conveyed to US political leaders to support their informed decision-making. With regard to defining what “new” steps may be politically viable, it may be helpful to recall that the fiscal year 2016 National Defense Authorization Act’s discussion of the US Stockpile Responsiveness Program indicates bipartisan support for “the policy of the United States to identify, sustain, enhance, integrate, and continually exercise all capabilities required to conceptualize, study, design, develop, engineer, certify, produce, and deploy nuclear weapons to ensure the nuclear deterrent of the United States remains safe, secure, reliable, credible, and responsive.”<sup>38</sup> Recall also that then-commander of US Strategic Command, Gen Kevin Chilton, USAF, observed publicly that the US nuclear force posture deemed adequate for the 2010 NPR was predicated on the assumptions that Russia would abide by its



arms control treaty commitments and that there would be no call for additional capabilities.<sup>39</sup> The Russians have since violated the former assumption, and the latter is now an open question given Moscow's expansionism, buildup of new nuclear forces, and extremely dangerous views of escalation.

However the delineation of necessary and politically viable Western steps to support deterrence and assurance may unfold, a more direct and unified Western declaratory policy should complement any plan. The long-held policy notion that uncertainty and ambiguity with regard to Western deterrence strategy are adequate for deterrence needs to be reconsidered. Historical and contemporary evidence is overwhelming that, as with conventional forces, uncertainty and ambiguity sometimes are not adequate for deterrence or assurance. Rather, explicit and direct statements are necessary in some cases; establishing effective deterrence of the Putin regime in particular appears to be such a case. ■■■

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**Notes**

1. President, National Security Presidential Memorandum, "Rebuilding the U.S. Armed Forces," WhiteHouse.gov, 27 January 2017, <https://www.whitehouse.gov/the-press-office/2017/01/27/presidential-memorandum-rebuilding-us-armed-forces>.

2. Rachael Karas, "Air Force Nuclear Chief: Mattis Wants Nuclear Review Completed within Six Months," Inside Defense, 29 March 2017, <https://insidedefense.com/daily-news/air-force-nuclear-chief-mattis-wants-nuclear-review-completed-within-six-months>.

3. For a careful comparison of the previous Nuclear Posture Reviews (NPR), see Kurt Guthe, "Summaries of the 1994, 2001, and 2010 Nuclear Posture Review," *Information Series*, no. 405 (Fairfax, VA: National Institute Press, 12 May 2016).

4. This worldview was reflected in a highly regarded 1991 *Foreign Affairs* article written by three senior former officials and authors, including the late Robert McNamara. To wit, hostility with Russia was described as "hardly more likely to be revived as the religious wars of the sixteenth and seventeenth centuries between Catholics and Protestants in Europe." Carl Kaysen, Robert S. McNamara, and George W. Rathjens, "Nuclear Weapons After the Cold War," *Foreign Affairs* 70, no. 4 (Fall 1991): 96. Over two decades later, the Global Zero Commission study, chaired by a former vice chairman of the Joint Chiefs of Staff, similarly said, "The risk of nuclear

confrontation between the United States and either Russia or China belongs to the past, not the future.” James Cartwright, chair, Global Zero U.S. Nuclear Policy Commission, *Modernizing U.S. Nuclear Strategy, Force Structure and Posture* (Washington, DC: Global Zero, May 2012), 6, [http://www.globalzero.org/files/gz\\_us\\_nuclear\\_policy\\_commission\\_report.pdf](http://www.globalzero.org/files/gz_us_nuclear_policy_commission_report.pdf).

5. Department of Defense, *2010 Nuclear Posture Review Report* (Washington, DC: Department of Defense, April 2010), i, iii–vii, [https://www.defense.gov/Portals/1/features/defenseReviews/NPR/2010\\_Nuclear\\_Posture\\_Review\\_Report.pdf](https://www.defense.gov/Portals/1/features/defenseReviews/NPR/2010_Nuclear_Posture_Review_Report.pdf).

6. So much so that Sweden has decided to return to military conscription, and the Swedish defense minister, Peter Hultquist, has acknowledged: “Politicians at the time maybe thought that the future would be more sunny than the reality is today. . . . The security situation and what could come in the future was underestimated.” See Martin Selsoe Sorensen, “Sweden Reinstates Conscription, with an Eye on Russia,” *New York Times*, 2 March 2017, [https://www.nytimes.com/2017/03/02/world/europe/sweden-draft-conscription.html?\\_r=0](https://www.nytimes.com/2017/03/02/world/europe/sweden-draft-conscription.html?_r=0).

7. Russian Foreign Minister Sergei Lavrov, quoted in Hui Min Neo and Bryan McManus, “US Pledges ‘Unwavering’ Commitment, Europe Lukewarm,” AFP, 18 February 2017, <https://www.yahoo.com/news/pence-caps-week-us-diplomatic-efforts-calm-allies-055812729.html>.

8. Gen Philip Breedlove, commander of US European Command, US European Command Posture Statement 2016, 25 February 2016, <http://www.eucom.mil/media-library/article/35164/u-s-european-command-posture-statement-2016>. “Russia’s continued aggressive actions and malign influence remain a top concern for our nation and my highest priority as EUCOM Commander.”

9. See, for example, Keith Payne and John Foster, *Russian Strategy: Expansion, Crisis and Conflict* (Fairfax, VA: National Institute Press, 2016). See also Dave Johnson, “Nuclear Weapons in Russia’s Approach to Conflict,” *Recherches & Documents*, no. 6 (November 2016): 13, [www.FRSTRATEGIE.org](http://www.FRSTRATEGIE.org).

10. Gen Philip Breedlove, USAF, Retired, *Memo to Washington: Reforming National Defense to Meet Emerging Global Challenges* (Arlington, VA: Mitchell Institute, March 2017), 8, [http://media.wix.com/ugd/a2dd91\\_8b654eeae2fa4980a648d92c3f62d796.pdf](http://media.wix.com/ugd/a2dd91_8b654eeae2fa4980a648d92c3f62d796.pdf).

11. Michael Gordon, “Russian Cruise Missile, Deployed Secretly, Violates Treaty, Officials Say,” *Boston.com*, 14 February 2017, <https://www.boston.com/news/world-news/2017/02/14/russian-cruise-missile-deployed-secretly-violates-treaty-officials-say>. See also Adm Harry Harris, commander, US Pacific Command, “The View from the Indo-Asia-Pacific” (address, WEST 2017 Conference, San Diego, CA, 21 February 2017), 4, <http://www.pacom.mil/Media/Speeches-Testimony/Article/1089966/west-2017-keynote-the-view-from-the-indo-asia-pacific/>.

12. Quoted in “Russia Today Is Not Interested in U.S.-Proposed Arms Reduction—Sergei Ivanov,” *Interfax*, 5 March 2013, <http://www.interfax.com/newsinf.asp?id=400700>.

13. The commander of US Strategic Command, Gen John Hyten, USAF, has rightly said of the US strategic nuclear force: “It’s still ready, safe, secure, reliable. But it’s old.” Quoted in “Hyten: Modernize, Don’t Increase Number of Nukes,” *Air Force Magazine Daily Report*, 2 March 2017, <http://airforcemag.com/DRArchive/Pages/2017/March%202017/March%2002%202017/Hyten-Modernize,-Don't-Increase-Number-of-Nukes.aspx>.

14. There are many open discussions regarding allied concerns. See, for example, Bradley Peniston, “A Key NATO Ally Looks Nervously at Putin—and Trump,” *Defense One*, 23 January 2017, <http://www.defenseone.com/threats/2017/01/key-nato-ally-looks-nervously-putin-and-trump/134765/>.

15. Joint Chiefs of Staff, *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World* (Washington, DC: Joint Chiefs of Staff, 14 July 2016), 25, 27, [http://www.dtic.mil/doctrine/concepts/joe/joe\\_2035\\_july16.pdf](http://www.dtic.mil/doctrine/concepts/joe/joe_2035_july16.pdf).

16. Given these unfortunate realities, key Obama administration officials rightly concluded that we are now playing catch-up as the modernization of US nuclear capabilities is priority number one for the deterrence of enemies and the assurance of allies. As a 2016 DOD report states: “The nuclear deterrent is the DoD’s highest priority mission.” Department of Defense, Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, *Strategic Planning Guidance FY 2018–2022*, February 2016, 2. And, as former Secretary of Defense Carter noted in November 2016, “While we didn’t build anything new for 25 years, and neither did our allies, others did—including Russia, North Korea, China, Pakistan, India, and for a period of time, Iran. We [now] can’t wait any longer.” Quoted in Jamie McIntyre, “Carter Says Nuclear-Armed Foes Catching Up to the US,” *Washington Examiner*, 3 November 2016, <http://www.washingtonexaminer.com/carter-says-nuclear-armed-foes-catching-up-to-the-us/article/2606380>.

17. Max Fisher, “Fearing U.S. Withdrawal, Europe Considers its Own Nuclear Deterrent,” *New York Times*, 6 March 2017, <https://www.nytimes.com/2017/03/06/world/europe/european-union-nuclear-weapons.html>. For a discussion that suggests this is not a serious consideration in Germany but is in other allied countries, see Hans Rühle and Michael Rühle, “German Nukes: The Phantom Menace,” *Information Series*, no. 419 (Fairfax, VA: National Institute Press, 22 March 2017), <http://www.nipp.org/2017/03/21/ruhle-hans-and-michael-ruhle-german-nukes-the-phantom-menace/>.

18. Sam Jones, “NATO and EU Need ‘Grand Strategy’ to Resist Putin, Says General,” *Financial Times*, 2 March 2017, <https://www.ft.com/content/e8dc5f7c-ff67-11e6-8d8e-a5e3738f9ae4>.

19. Andrew Osborn, “Putin: Collapse of the Soviet Union Was ‘Catastrophe of the Century,’” *Independent*, 26 April 2005, <http://www.independent.co.uk/news/world/europe/putin-collapse-of-the-soviet-union-was-catastrophe-of-the-century-521064.html>.

20. Quoted in Justin Huggler, “Putin ‘Privately Threatened to Invade Poland, Romania and the Baltic States,’” *Telegraph*, 18 September 2014, <http://www.telegraph.co.uk/news/worldnews/europe/russia/11106195/Putin-privately-threatened-to-invade-Poland-Romania-and-the-Baltic-states.html>.

21. Statement of Gen Curtis M. Scaparrotti, commander, United States European Command, in House, *Military Assessment of Russian Activities and Security Challenges in Europe: Hearings before the Subcommittee on Armed Services*, 115th Cong., 1st sess., 28 March 2017, 6, <http://docs.house.gov/meetings/AS/AS00/20170328/105780/HHRG-115-AS00-Wstate-ScaparrottiC-20170328.pdf>.

22. For more information, see Thomas Scheber, “Evolutionary Psychology, Cognitive Function, and Deterrence,” in *Understanding Deterrence*, ed. Keith B. Payne (New York: Routledge, 2013), 65–92.

23. This need for adaptability has been emphasized by the Trump administration’s national security advisor. See Lt Gen H. R. McMaster, USA, “Strategy, Policy and History” (address, Foreign Policy Initiative Forum, Washington, DC, 20 November 2016), 10, <http://foreignpolicy.org/2016forum/mcmaster>.

24. Considerable scholarly analysis now concludes that the commonly claimed linkage between US nuclear reductions and the prevention of nuclear nonproliferation does not, in fact, exist. See Matthew Kroenig, “US Nuclear Weapons and Non-Proliferation: Is There a Link?” *Journal of Peace Research* 53, no. 2 (1 March 2016): 166–79, <http://doi.org/bsjp>.

25. Quoted in House of Commons Hansard, “UK’s Nuclear Deterrent,” *Parliament.uk*, 18 July 2016, <https://hansard.parliament.uk/Commons/2016-07-18/debates/7B7A196B-B37C-4787-99DC-098882B3EFA2/UKSNuclearDeterrent>.

26. Lally Weymouth, “‘Russia Is a Threat’: Estonia Frets about its Neighbor,” *Washington Post*, 24 March 2017, [https://www.washingtonpost.com/opinions/russia-is-a-threat-estonia-frets-about-its-neighbor/2017/03/24/011ad320-0f2b-11e7-9b0d-d27c98455440\\_story.html?utm\\_term=.a5d5a3c22108](https://www.washingtonpost.com/opinions/russia-is-a-threat-estonia-frets-about-its-neighbor/2017/03/24/011ad320-0f2b-11e7-9b0d-d27c98455440_story.html?utm_term=.a5d5a3c22108).

27. Andrius Sytas, “Lithuania Says Russia Has Ability to Launch Baltic Attack in 24 Hours,” Reuters, 3 April 2017, <http://www.reuters.com/article/us-lithuania-russia-idUSKBN1750Z0>.

28. Matthew Bodner, “No End in Sight for Russia’s Baltic Tit-for-Tat,” *Moscow Times*, 23 September 2016, <https://themoscowtimes.com/articles/baltic-tit-for-tat-55434>.

29. David A. Shlapak and Michael W. Johnson, *Reinforcing Deterrence on NATO’s Eastern Flank: Wargaming the Defense of the Baltics* (Washington, DC: RAND Corporation, 2016), 1, [https://www.rand.org/content/dam/rand/pubs/research\\_reports/RR1200/RR1253/RAND\\_RR1253.pdf](https://www.rand.org/content/dam/rand/pubs/research_reports/RR1200/RR1253/RAND_RR1253.pdf).

30. Brian Everstine, “Thornberry: Expect Nuclear Tests during the Lame Duck,” *Air Force Magazine Daily Report*, 2 December 2016, <http://www.airforcemag.com/DRArchive/Pages/2016/December%202016/December%2002%202016/Thornberry-Expect-Nuclear-Tests-During-the-Lame-Duck.aspx>.

31. Defense Science Board, *Seven Defense Priorities for the New Administration* (Washington, DC: Defense Science Board, December 2016), 24, <http://www.acq.osd.mil/dsb/priorities.htm>.

32. Tom Karako, Keith Payne, Brad Roberts, Henry A. Obering III, and Kenneth Todorov, *Missile Defense and Defeat: Considerations for the New Policy Review* (Washington, DC: Center for Strategic and International Studies, March 2017), [https://csis-prod.s3.amazonaws.com/s3fs-public/publication/170228\\_Karako\\_MissileDefenseDefeat\\_Web.pdf?oYEFXIARU6HCqtRN3Zuq7mKljU3jllq](https://csis-prod.s3.amazonaws.com/s3fs-public/publication/170228_Karako_MissileDefenseDefeat_Web.pdf?oYEFXIARU6HCqtRN3Zuq7mKljU3jllq).

33. Chairman of the Joint Chiefs of Staff Gen Joseph Dunford recently observed, “Clearly we see now a combination of both intercontinental ballistic missile capability as well as an effort to put a nuclear warhead on that intercontinental ballistic missile. So North Korea not only threatens South Korea and not only threatens the region, but now presents a threat to the homeland as well.” Gen Joseph Dunford, USMC, interview with Michael O’Hanlon, Brookings Institution, 23 February 2017, <https://www.defense.gov/Video?videoid=511122>.

34. See Oriana Pawlyk, “F-35 Could Carry B61 Nuclear Warhead Sooner Than Planned,” *DefenseTech*, 10 January 2017, <https://defensetech.org/2017/01/10/f-35-carry-b61-nuclear-warhead-sooner-planned/>.

35. A December 2015 NATO report states that dual-capable aircraft “are available for nuclear roles at various levels of readiness—the highest level of readiness is measured in weeks.” An earlier Government Accountability Office (GAO) report to Congress places that time at 30 days. See, respectively, “NATO’s Nuclear Deterrence Policy and Forces,” North Atlantic Treaty Organization, 3 December 2015, [http://www.nato.int/cps/en/natohq/topics\\_50068.htm](http://www.nato.int/cps/en/natohq/topics_50068.htm); and GAO, *Nuclear Weapons: DOD and NNSA Need to Better Manage Scope of Future Refurbishments and Risks to Maintaining U.S. Commitments to NATO*, GAO-11-387 (Washington, DC: GAO, 2 May 2011), 5, <http://www.gao.gov/products/GAO-11-387>.

36. Defense Science Board, *Seven Defense Priorities*. See also comments by Air Force Chief of Staff Gen David Goldfein in “Nuclear Posture Review Due in Spring: Air Force Chief,” *Exchange Monitor*, 9 February 2017, <http://www.exchangemonitor.com/publication/morning-briefing/nuclear-posture-review-due-spring-air-force-chief/>.

37. James M. Acton, codirector, Nuclear Policy Program, Carnegie Endowment for International Peace (address, Nuclear Deterrence Summit, Washington, DC, 28 February 2017).

38. National Defense Authorization Act for Fiscal Year 2016, Public Law 114-92, 114th Cong., 1st sess. (25 November 2015), Sec. 4220(a).

39. Statement of Kevin Chilton, in Senate, Nuclear Posture Review: Hearing before the Armed Services Committee, 111th Cong., 2nd sess. (22 April 2010), <https://www.gpo.gov/fdsys/pkg/CHRG-111shrg63689/html/CHRG-111shrg63689.htm>.

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