

## The Need for Limited Nuclear Options

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Elbridge A. Colby

*I first met Ted Warner in the spring of 2009. I was about to graduate from Yale Law School and had been awarded a fellowship to work for a year in the government on nuclear policy issues. Ted had been tapped by Secretary of Defense Robert Gates to lead the department's team for the follow-on to the expiring Strategic Arms Reduction Treaty (START). David Ochmanek, whom I'd known from my adjunct work at RAND, recommended I talk to Ted, and he gave me a spot on the team.*

*For the next year, I worked closely with Ted, first on the delegation to the treaty negotiations in Geneva and then on the effort to gain Senate advice and consent to ratification. During this period, I learned a tremendous amount from Ted—about nuclear and conventional forces policy, Cold War strategy, Russia, the Department of Defense, and beyond. Following the end of my fellowship, I left the Pentagon but kept in close touch with Ted and continued to benefit from his sage advice and comments on my work as well as from his generous mentorship.*



What should the long-term policy of the United States be regarding the role and guidelines for the potential employment of its nuclear weapons? Whatever one thinks of the merits of the project to abolish nuclear weapons, we find ourselves still very far from the realization of its goal, despite the endeavor's recent rise to the top of the international security agenda and its embrace by large numbers of distinguished political and military figures. Given that the reasons that have impelled almost a dozen nation-states to obtain and maintain nuclear weapons remain potent today, it seems clear that nuclear weapons will remain an important part of the international security landscape for as far into the future as the eye can see. It is therefore important for the United States to prepare its nuclear policy and forces for the long haul.

On what lasting conceptual foundations, then, should the United States form its nuclear force structure and posture, decide about the appropriate criteria for using or threatening to use its nuclear weapons, and determine what measures it is prepared to undertake in terms of the restraint and control of these arms? Which attributes of U.S. nuclear capability should be privileged and which disfavored? Which strategic, military, and political ends should U.S. nuclear policy seek to serve? And how should

the current U.S. nuclear policy, forces, and day-to-day posture differ from the nuclear policy and posture inherited from the closing years of the Cold War?

The short answer is that the long-term U.S. nuclear policy, force, and posture should not differ substantially in their basic form from those that exist today. The nuclear arsenal and the policies that governed its possible use that emerged from the Cold War and that have come down to us today, albeit with a smaller arsenal and with somewhat more-restrictive guidelines for use, reflect the astute and sensible perception that the U.S. nuclear force should combine the ability to wreak devastating damage on an opponent with efforts to minimize the degree to which that very capability spurs or exacerbates tensions. The goal is thus both effective deterrence and a high degree of stability. Like this force, then, a long-term U.S. nuclear policy for the 21st century should ensure that the U.S. nuclear deterrent can deter aggression against vital U.S. and allied interests, is sized and shaped according to what is needed to deter (and, to a lesser but important degree, to what is needed to assure allies and partners), ensures that the United States maintains a devastating second-strike capability even under the most stressing conditions, provides for technical redundancy and a reserve capacity should geopolitical conditions deteriorate or the worst-case scenario come to pass, and minimizes its own destabilizing aspects.<sup>1</sup> Needless to say, any of these objectives might be more perfectly achieved than they have been in the past, but these are well established and relatively uncontroversial principles to guide U.S. nuclear policy and the posturing and development of the force.<sup>2</sup>

But in other respects, the U.S. nuclear force that emerged from the final years of the Cold War—and thus, to a considerable degree, the nuclear force that exists today in much the same basic form, albeit in significantly smaller numbers—is not well suited to the emerging international security environment. The late Cold War U.S. nuclear force was a product of the fear of titanic global nuclear war with the Soviet Union and the consequent overriding concern with deterring that eventuality by being able to deliver a massive, devastating retaliatory blow against the Soviet Union under any conceivable circumstances. Concerns for the survivability of U.S. strategic nuclear forces in the face of a possible counterforce attack, for the ability to penetrate enemy strategic air and missile defenses, and for other attributes connected to that cornerstone ability of being able to unleash an annihilating counterblow therefore overrode interests in developing a nuclear force capable of more-limited, tailored application. Recognition of the importance of and thus interest in controlling escalation and consequently in creating a force capable of more-discriminating employment grew sub-

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<sup>1</sup> For the author's views on the overall principles that should guide the U.S. nuclear force, see Elbridge A. Colby, "Guiding Principles for the New Nuclear Guidance," *New Paradigms Forum*, April 11, 2011.

<sup>2</sup> See, for instance, U.S. Department of Defense, *Nuclear Posture Review Report*, Washington, D.C.: U.S. Government Printing Office, 2010, especially pp. 19–30, and U.S. Department of Defense, "Report on Nuclear Employment Strategy of the United States Specified in Section 491 of 10 U.S.C.," June 12, 2013.

stantially over the course of the Cold War, especially once the Soviets began to field a large and survivable strategic force of their own. The U.S. nuclear force that existed by the end of the Cold War, however, still reflected the overwhelming priority of ensuring the ability to deliver a massive, devastating blow.<sup>3</sup> Capabilities for control of escalation in a nuclear conflict were recognized and acknowledged but only unevenly and imperfectly realized in practice.<sup>4</sup> Because today's U.S. nuclear policy and force structure are essentially modestly revised and smaller versions of those of the late Cold War, they too remain suited far less for discrimination and control than for carrying out devastating nuclear retaliation.

<sup>3</sup> Interest in greater flexibility began tentatively under the Eisenhower administration, peaked in the early Kennedy administration, and then came to fruition in the Nixon, Ford, Carter, and Reagan administrations. For a historical treatment, see Elbridge A. Colby, "The United States and Discriminate Nuclear Options in the Cold War," in J. Larsen and K. Kartchner, eds., *Limited Nuclear War*, Palo Alto, Calif.: Stanford University Press, 2014. See also Terry Terriff, *The Nixon Administration and the Making of U.S. Nuclear Strategy*, Ithaca, N.Y.: Cornell University Press, 1995; Scott Sagan, *Moving Targets: Nuclear Strategy and National Security*, Princeton, N.J.: Princeton University Press, 1989; and Janne E. Nolan, *Guardians of the Arsenal: The Politics of Nuclear Strategy*, New York, Basic Books, 1989. For contemporary official treatments of the problem, see National Security Study Memorandum 169, "U.S. Nuclear Policy," February 13, 1973; National Security Study Memorandum 169 Summary Report, June 8, 1973; National Security Decision Memorandum 242, "Policy for Planning the Employment of Nuclear Weapons," January 17, 1974; Major General John A. Wickham, Jr., memorandum to Major General Brent Scowcroft, "Policy Guidance for the Employment of Nuclear Weapons [NUWEP]," April 3, 1974; Secretary of Defense James R. Schlesinger, *Annual Defense Department Report for FY1975*, Washington, D.C.: U.S. Government Printing Office, 1974; "Nuclear Targeting Policy Review," November 1978; Presidential Directive 59, "Nuclear Weapons Employment Policy," July 25, 1980; U.S. Department of Defense, "Policy Guidance for the Employment of Nuclear Weapons (NUWEP)," October 1980; Secretary of Defense Harold Brown, remarks delivered at the Convocation Ceremonies for the Naval War College, Newport, Rhode Island, August 20, 1980, in Philip Bobbitt, Lawrence Freedman, and Gregory F. Treverton, eds., *U.S. Nuclear Strategy: A Reader*, New York: New York University Press, 1989; Secretary of Defense Harold Brown, *Department of Defense Annual Report for FY1981*, Washington, D.C.: U.S. Government Printing Office, 1980; Walter B. Slocombe, "The Counter-veiling Strategy," *International Security*, Vol. 5, No. 4, Spring 1981; and Caspar W. Weinberger, "U.S. Defense Strategy," *Foreign Affairs*, Spring 1986. For influential nongovernmental works from the time, see, for instance, Desmond Ball, *Déjà Vu: The Return to Counterforce in the Nixon Administration*, California Seminar on Arms Control and Foreign Policy, 1974; Lynn Davis, *Limited Nuclear Options: Deterrence and the New American Doctrine*, Adelphi Paper 121, 1976; Benjamin S. Lambeth, *Selective Nuclear Options in American and Soviet Strategic Policy*, Santa Monica, Calif.: RAND Corporation, R-2043-DDRE, 1976; Sidney Drell and Frank von Hippel, "Limited Nuclear War," *Scientific American*, November 1976; Desmond Ball, *Can Nuclear War Be Controlled?* Adelphi Paper 169, 1981; Colin Gray, "Nuclear Strategy: The Case for a Theory of Victory," *International Security*, 1979; and Michael Howard, "On Fighting a Nuclear War," *International Security*, Spring 1981. The Soviets were also interested in developing capabilities. See, for instance, Edward L. Warner, *Soviet Concepts and Capabilities for Limited Nuclear War: What We Know and How We Know It*, Santa Monica, Calif.: RAND Corporation, N-2769-AF, 1989.

<sup>4</sup> Attempts to integrate greater discrimination and flexibility into U.S. nuclear war plans and the U.S. nuclear posture were retarded and hobbled by bureaucratic inertia; changes in leadership; concerns about the potential for such changes to have destabilizing implications; and, perhaps above all, by the formidable technical, organizational, and other difficulties of building and planning for a realistic limited nuclear warfare capability. For a discussion of this problem, see Colby, 2014. See also William E. Odom, "The Origins and Design of Presidential Decision-59: A Memoir," in Henry D. Sokolski, ed., *Getting MAD: Nuclear Mutual Assured Destruction, Its Origins and Practice*, Carlisle, Pa.: Strategic Studies Institute, 2004.

This is a problem, given the nature of the emerging international security environment to which U.S. nuclear policy should be adapted. The threat of a massive nuclear attack on the United States remains a possibility and, thus, so too does the threat of such a large-scale strike being used for coercive purposes. The likelihoods of both, however, are dramatically lower than their Cold War heights. Russia remains the only country with a nuclear arsenal comparable in size and sophistication to that of the United States, yet Moscow's strategic nuclear force today is both far smaller and more perceptibly oriented to retaliation than it was during the Cold War. While conflict between the United States and Russia remains plausible, the likelihood of war between the two countries is much lower, and the chances that a war would escalate to apocalyptic levels are far more modest as well. Meanwhile, China, probably the most serious military-strategic challenge for the United States in the coming decades, appears, at least for the present, to be eschewing the buildup of a nuclear force on par with those of the two Cold War superpowers. Beijing is focusing instead on the development and deployment of high-end conventional capabilities designed to blunt U.S. power projection in East Asia and of a medium-sized, modern, and sophisticated strategic nuclear force able to provide a reliable but relatively modest second-strike capability in the event of an attempted U.S. disarming first strike.<sup>5</sup>

Taken together, these assessments of Russia and China strongly suggest that the probability of cataclysmic nuclear war is considerably smaller than it was during the Cold War. Of course, it is still only prudent to prepare and posture U.S. strategic nuclear forces for the possibility of such a conflict and to continue to be able to escalate to such a level of devastation—by maintaining substantial numbers of our strategic ballistic missile submarines at sea and our silo-based intercontinental ballistic missiles (ICBMs) on day-to-day alert, for instance. The prospect of such a war need not and should not, however, receive the same priority in U.S. national policy and force planning and procurement that it did during the 1970s and 1980s.

But while massive nuclear war appears exceedingly unlikely, serious conflict at lower levels of destructiveness *does* appear possible and, in some respects, may be becoming increasingly so.<sup>6</sup> Needless to say, the United States has an interest in deter-

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<sup>5</sup> See U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China, 2013*, Washington, D.C.: Government Printing Office, 2013.

<sup>6</sup> Several factors point toward the continued, albeit thankfully lower, possibility of major war. While contemporary politics lack the ideological intensity that characterized the 75-year period that followed World War I, disputes between other major powers (and their allies or clients) do remain—over territory, as in the East and South China Seas; over the treatment of favored minorities, as with ethnic Russian groups in nations now independent of Moscow's suzerainty; over influence and the control of policy, as on the Korean Peninsula; and over the proper boundaries of forceful intervention, as in Syria, Libya, and Kosovo. Moreover, structural developments in the international arena suggest that the possibility of conflict remains and may be growing. The nearly hegemonic power structure that typified the immediate post-Cold War era, one of almost untrammelled American influence, is passing, and hegemonic systems are often seen to be more conducive to stability than multipolar systems. (See, for instance, Robert Gilpin, *War and Change in World Politics*, Cambridge, UK: Cambridge University Press,

ring and, if necessary, prevailing in such contingencies. Moreover, the United States has an interest not only in preventing actual war but also in deterring the effective use of the *threat* of military force for political leverage—that is, deterring future instances of Hitler’s remilitarization of the Rhineland and seizure of Czechoslovakia. Yet the use of military capabilities for coercive purposes appears alive and well, most notably in the waters of the western Pacific and South China Sea and in the Middle East. Therefore, for its own security, and more immediately because of its explicit and implicit extended deterrent commitments in Europe, Asia, and the Middle East, the United States is going to need to be prepared to resist attempts at coercion against itself and its allies and, should war break out, to meet or at least tolerably satisfy its strategic-political requirements. In concert with nonnuclear U.S. military capabilities, the U.S. nuclear deterrent should help the United States achieve these objectives of deterring more-limited wars and assaults on its vital interests, not least because the most plausible route to general nuclear war lies through a war that begins at a lower level of armed conflict.

Given this strategic landscape, what should the United States’ nuclear force posture and policy be? An answer to this question must be derived from an estimate of the likely strategic landscape the United States will face because any sensible method for determining what a military capability—and thus the U.S. nuclear force—should look like ought to proceed from an assessment of the plausible serious threats and types of major conflicts the United States will likely face. Broadly speaking, these are likely to fall into two categories: first, conflicts with rogue states, such as North Korea and Iran, potentially armed with much smaller but still significant arsenals of nuclear weapons and long-range delivery systems, and, second, conflicts with large, near-peer adversaries, namely China and Russia, capable of mounting daunting challenges to the United States at the conventional level (especially in their neighboring regions) and possessing very serious nuclear capabilities (more advanced and far larger in the Russian case). Each of these scenarios introduces a decidedly novel factor into a U.S. defense planning accustomed to escalation dominance since the collapse of the Soviet Union: in the first case, the existence of plausibly survivable and iteratively usable nuclear forces on

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1981.) Even as predictions of American decline seem grossly exaggerated, it does seem evident that the emerging international security environment will involve at least one power—China—with a comparable amount of national strategic power, as well as others that can play the role of major secondary powers, such as Russia. This suggests that the international system will lack the clarity and efficiency characteristic of hegemonic systems, promising more in the way of confusion, defensive behavior, and miscalculation. Also, while views on the utility and morality of war have clearly grown more negative, any evolution of mores away from the acceptance of war must be regarded as uneven and at least somewhat contingent. While Europeans seem sick and tired of war, views on the advisability and justifiability of war appear considerably different in Asia and the Middle East, not to mention North America. Finally, it must be reckoned that the recession of the influence of nuclear weapons from international politics has removed some caution from nations’ calculations. U.S. decisions about assertive military intervention in the Middle East are no longer shadowed as they were in 1973 and even in 1990 by the restraining possibility of inadvertently coming into conflict with the Soviet Union. For a fuller exposition of this argument, see Elbridge A. Colby, “Is Nuclear Deterrence Still Relevant,” in Adam B. Lowther, ed., *Deterrence: Rising Powers, Rogue Regimes, and Terrorism in the 21st Century*, New York: Palgrave MacMillan, 2012, pp. 49–74.

the part of small states hostile to U.S. interests and, in the second, considerably more fearsome conventional capabilities and a clearly assured (in the case of Russia) or practically near-assured (in that of China) second-strike nuclear capability.

In the event of armed conflict in either or both of these categories, the U.S. war effort would have to pursue two objectives to be justifiable: seeking to achieve important U.S. politico-military aims and, at the same time, limiting damage and risk to U.S. and allied interests, most importantly including the avoidance of nuclear attacks against our cities or those of our allies. Thus, in any conflict with adversaries who possess survivable nuclear arsenals of any significant size, the United States will want to navigate between the opposing perils of defeat or surrender of its stakes in the conflict on the one hand and unrestrained war on the other.

The United States is therefore going to need to be prepared to fight *limited* wars—wars characterized *both* by the pursuit of its military-political ends *and* by serious efforts to control or at least limit the likelihood of escalation.<sup>7</sup> One of the most obvious ways of limiting such wars is by fighting them solely with conventional weapons, and there is a growing amount of thought as to how to conduct major but limited conventional wars with both significant powers and rogue states.<sup>8</sup> Efforts to improve the ability of U.S. conventional forces to wage such wars, such as through the creation of and efforts to implement the Air-Sea Battle Concept, sensibly occupy the forefront of attempts to address the challenges that both rogue state adversaries and near peers pose.<sup>9</sup> For numerous reasons, conventional forces are and indisputably must be the preferred means of military response for the United States, above all because the clearest fire-break against catastrophic nuclear use is simply avoiding any nuclear use whatsoever.

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<sup>7</sup> For some signal studies of the nature and complexities of limited war and escalation, see, among others, Robert E. Osgood, *Limited War: The Challenge to American Strategy*, Chicago: University of Chicago Press, 1957; Robert E. Osgood, “The Reappraisal of Limited War,” *The Adelphi Papers*, special issue, *Problems of Modern Strategy: Part I*, Vol. 9, No. 54, pp. 41–54; Bernard Brodie, *Strategy in the Missile Age*, Princeton, N.J.: Princeton University Press, 1959; Klaus E. Knorr and Thornton Reed, eds., *Limited Strategic War*, New York: Frederick A. Praeger, 1962; Herman Kahn, *On Thermonuclear War*, Princeton, N.J.: Princeton University Press, 1961; Herman Kahn, *On Escalation: Metaphors and Scenarios*, New York: Frederick A. Praeger, 1965; Thomas C. Schelling, *Arms and Influence*, New Haven, Conn.: Yale University Press, 1965; Henry A. Kissinger, *Nuclear Weapons and Foreign Policy*, New York: Harper Brothers, 1957; Morton H. Halperin, *Limited War in the Nuclear Age*, New York: John Wiley & Sons, 1965; and Richard Smoke, *War: Controlling Escalation*, Cambridge, Mass.: Harvard University Press, 1977.

<sup>8</sup> See, for instance, Forrest E. Morgan, Karl P. Mueller, Evan S. Medeiros, Kevin L. Pollpeter, and Roger Cliff, *Dangerous Thresholds: Managing Escalation in the 21st Century*, Santa Monica, Calif.: RAND Corporation, MG-614-AF, 2008; Forrest E. Morgan, *Dancing with the Bear: Managing Escalation in a Conflict with Russia*, Paris: Institut Français des Relations Internationales, 2012; and Keir A. Lieber and Daryl G. Press, *Coercive Nuclear Campaigns in the 21st Century: Understanding Adversary Incentives and Options for Nuclear Escalation*, Monterey, Calif.: U.S. Naval Postgraduate School, 2013.

<sup>9</sup> General Norton A. Schwartz and Admiral Jonathan W. Greenert, “AirSea Battle: Promoting Stability in an Era of Uncertainty,” *The American Interest*, February 20, 2012.

But because some prospective U.S. adversaries have nuclear weapons (or might have them before long) and because the United States and its allies cannot forever guarantee conventional superiority in every scenario about which they care, U.S. nuclear weapons must also be part of the equation when planning for possible armed conflicts with both smaller hostile rogue states and with larger near peers. Moreover, there are political reasons for considering U.S. nuclear weapons in these contexts, not least because U.S. allies strongly insist that U.S. willingness and preparedness to use nuclear weapons remain at the core of the U.S. extended deterrence posture.<sup>10</sup> Thus, the United States also needs to grapple with the problem of how to conduct and manage a limited war in which nuclear weapons play a critical part. This means undertaking the thinking and planning required to wage limited nuclear war and developing the capabilities needed to do so effectively.

It is important to emphasize that the major rationale for planning for the possibility of limited nuclear war is to prevent war—including large-scale nuclear war—from breaking out in the first place. Deterrence—including specifically nuclear deterrence—of both the war prevention and intrawar escalation avoidance varieties is much more powerful and effective to the extent that U.S. military—again, including nuclear—capabilities are more practically employable and thus their potential use much more credible. This is because, to the extent such capabilities are credibly employable, potential adversaries will have to weigh the prospect of suffering the brunt of U.S. military—including nuclear—strikes more heavily, which in turn will add to their incentives for restraint. For this reason, the United States should want to make its nuclear forces more usable and its threats credible.<sup>11</sup> If, on the other hand, U.S. nuclear weapons can be used only in an unrestrained, massive fashion, their actual use in any contingency short of the apocalyptic would be wholly irrational—and thus incredible to U.S. adversaries.<sup>12</sup> And if their use would be incredible in any scenario short of the very worst, their deterrent effects would also be seriously reduced, as any rational opponent would sensibly reckon that the United States would not actually use them. We need not lean on the theoretical to believe that actual political actors would take advantage of the strategic space opened by what they perceive to be incredible or even simply implausible threats—we have solid evidence from the Cold War of just that.<sup>13</sup> Thus, the United

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<sup>10</sup> See, for instance, Joel Gehrke, “Obama to South Korea: Our ‘Nuclear Umbrella’ Is Protecting You,” *Washington Examiner*, February 12, 2013, and “Hagel Vows Defense Commitments to Japan Including Nuclear Umbrella,” *Japan Times*, April 30, 2013.

<sup>11</sup> This interest needs to be carefully traded off against the potential risks of fielding such capabilities, including their destabilizing aspects. Effective trade-offs can be achieved, however, through measures such as careful attention to minimizing the strategic counterforce characteristics of such capabilities.

<sup>12</sup> No one has made this argument more pointedly than Herman Kahn. For instance, see *On Thermonuclear War* (Kahn, 1961).

<sup>13</sup> For an excellent exposition of this point, see Francis Gavin, “Politics, History and the Ivory Tower—Policy Gap in the Nuclear Proliferation Debate,” *Journal of Strategic Studies*, Vol. 35, No. 4, August 29, 2012, pp. 573–600.

States will want to be able to use and credibly threaten to use its nuclear weapons in a discriminate and very limited fashion.

This is not to deny or belittle the profound and, in some cases, possibly insuperable difficulties of limiting escalation once the nuclear threshold has been crossed. But how can our nuclear weapons be strategically persuasive to an opponent if he knows that our using them would result in a spasm of almost inconceivable destruction wholly out of proportion to the stakes we have in a conflict? This is what a policy that does not provide control and discrimination in the use of nuclear weapons must logically entail. Of course, the possibility, however remote, that the United States would use nuclear weapons even in a manifestly irrational way is bound to induce some caution, but it can hardly be argued that this prospect would have as potent a deterrent effect as a nuclear force that could be employed in ways short of massive use would.<sup>14</sup>

The problems of an inflexible U.S. nuclear force are particularly acute in the context of American extended deterrence commitments. Are we going to deliberately invite nuclear strikes against our homeland over an armed conflict involving a Baltic state NATO ally? Or Taiwan? Or even for longer-standing allies, especially now that political conflict has lost the Manichean ideological character that typified international politics from the 1930s until 1991? As Henry Kissinger is supposed to have sagely observed, “Great powers do not commit suicide for allies”—or, it should hardly need to be added, *should* they.<sup>15</sup> Yet neither our allies nor our adversaries are likely to be so credulous or foolish as to allow us to rest our deterrent threats on bluffs in the event of a serious crisis or armed conflict without altering their behavior accordingly in ways we might well not much like—on the part of our allies by, for instance, becoming more accommodating toward our strategic rivals and, on the part of our adversaries, by behaving more aggressively against our interests.

But even if this all might be theoretically true, some object that nuclear war simply cannot be restrained. Given that nuclear weapons have not been used since 1945, it must be said that it remains highly speculative whether a nuclear war could remain limited. Of course, even the slight danger of an apocalyptic outcome must counsel the greatest caution in testing this proposition. But while the possibilities of escalation across the nuclear threshold must be considered with the most somber gravity, the notion that *any* nuclear use would *necessarily* lead to Armageddon strains credulity. Ultimately, *no one* in a conflict between adversaries with survivable nuclear forces would have an interest in a large-scale exchange of nuclear weapons, a fact that would provide immensely strong incentives for restraint that must not be ignored even as we must pay heed to the very real impetuses toward escalation that would exist but that

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<sup>14</sup> For a contrary view, see Kenneth N. Waltz, “Nuclear Myths and Political Realities,” *American Political Science Review*, Vol. 84, No. 3, pp. 731–745.

<sup>15</sup> Quoted in William Pfaff, “Why Georgia Does Not Belong in NATO,” *International Herald Tribune*, August 13, 2008.

are already widely and amply acknowledged. Is it therefore reasonable to conclude that, because a nuclear weapon has been used, the factors that we normally understand as determining the likelihood of escalation, restraint, and de-escalation—factors such as the type and location of the targets attacked, the scale of destructiveness inflicted, the military effect achieved, and the proposed terms for ending the war—would become irrelevant? Perhaps their relative weighting would change—but would they be irrelevant? Certainly, exacerbating factors of fear, confusion, and pride would intensify in the event of crisis, and even more so in war, but would the crossing of the nuclear threshold mean the end of rational calculation and attempts to exercise restraint? It seems not.<sup>16</sup>

It is equally important to emphasize that the ability to execute such options would *not necessitate* their implementation. Rather, in the event that the fortunes of war pressed the United States to consider options for serious escalation, U.S. leaders might well and reasonably choose other options—including vertical or horizontal escalation with conventional weapons or, conversely, partial or even full retreat; the stakes simply might not justify the grave risks such dramatic forms of escalation would entail. But U.S. leaders equally might well decide that escalation *is* needed and justified and that conventional options are insufficient or too escalatory. It is therefore important that the United States have these limited nuclear options. In any case, it should be emphasized that the United States would—or at the very least *should*—only seriously consider the employment of nuclear weapons under the most “extreme circumstances,” as the 2010 Nuclear Posture Review Report aptly put it.<sup>17</sup> No one should be suggesting that we use nuclear weapons (or seriously threaten to use them) in anything short of the most serious and grave contingencies.<sup>18</sup>

The United States will therefore want to have ways of credibly threatening to employ its nuclear weapons—and, if need be, of actually employing them—that are potent but that also have limited escalatory implications. In particular, it should be able to use these weapons in ways that are rationally correlated to the provocation or aggression—ways that are neither feckless nor suicidal. The purpose of such options would be to help persuade the enemy that it is better to terminate or at least de-escalate the conflict on a basis acceptable to the United States and its allies rather than to continue along the path he has embarked on.

U.S. nuclear weapons can reasonably serve two more specific roles in this context. First, they can be used to deter escalation by an adversary. Above all, of course,

<sup>16</sup> For a similar view, see Herman Kahn, *Thinking the Unthinkable in the 1980s*, Washington, D.C.: Hudson Institute, 1984, p. 37.

<sup>17</sup> U.S. Department of Defense, 2010, p. 16.

<sup>18</sup> Circumstances that might justifiably provoke a U.S. nuclear response might, in the foreseeable future, include (although not exclusively) the use of nuclear weapons or the initiation of nonnuclear attacks causing massive loss of life against the United States, its forces, or its allies. These would be the only kinds of circumstances in which it would be morally defensible to run such risks.

this means deterring an adversary's escalation to the use of nuclear weapons, especially against U.S. or allied population centers. But their role need not and should not be limited only to deterring an enemy's nuclear escalation. Rather, U.S. nuclear weapons can and should be used to deter a broader range of attacks, for instance large-scale biological or "existential" cyber attacks.<sup>19</sup> That said, in arenas in which the United States and its allies enjoy conventional superiority, the practical focus of nuclear deterrence would most reasonably be on enabling U.S. and allied conventional forces to achieve their objectives while deterring the opponent from introducing nuclear weapons or some other mechanism of catastrophic destruction or disruption into the struggle. U.S. nuclear weapons' basic purpose, in this context, would be to "keep the fight clean." This role already has utility in the case of Russia and China and would become increasingly important if North Korea continues to expand and improve its nuclear weapons and delivery systems or if Iran achieves a nuclear weapon capability.

The second purpose of nuclear weapons in the emerging strategic environment is quite different, however. This would be for the United States to use its nuclear weapons or the threat of their use to redress serious, and perhaps fatal, disadvantages in the balance of conventional military capabilities. It is fortunately true that U.S. conventional forces appear to hold the promise of remaining broadly superior to those of any competitor for the foreseeable future. Nonetheless, this second purpose could become more salient for two reasons. One is that the United States and its allies may not enjoy conventional superiority *within the realistic political-strategic boundaries of a given conflict scenario*. That is, within the confines of a given limited conflict, U.S. and allied conventional forces might be overmatched by an adversary's forces to such a degree that, to avoid defeat within the boundaries of the conflict, the United States and its allies might feel pressed to escalate—but doing so with available conventional forces might entail risks unacceptable to U.S. or allied political leadership, negating the relevance of overall U.S. conventional superiority.<sup>20</sup> For instance, the United States might fall behind in the military-technological competition with China over the western Pacific, and China might gain the ability to achieve local military objectives, the frustration of which would require the United States to substantially broaden or intensify a conflict with the People's Republic in ways that would be exceedingly unpalatable because of

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<sup>19</sup> The scope of things that the United States has actively sought to deter with its nuclear weapons has varied over time, but it would seem reasonable that the boundaries of such deterrence could include any attack of catastrophic consequence. For the utility of relying on the U.S. nuclear deterrent to ward off "catastrophic" cyberattacks, see Defense Science Board, *Resilient Military Systems and the Advanced Cyber Threat*, Washington, D.C.: Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, January 2013.

<sup>20</sup> A classic instance of this was the Vietnam War, in which the United States clearly outmatched North Vietnam in overall military terms but was unwilling to bring that conventional superiority to bear in ways that would be decisive because of the fear of intervention from China or the Soviet Union. Of course the same logic applied to the employment of nuclear weapons, which were briefly but never very seriously considered for use during the conflict in Vietnam.

China's own ability to match those escalatory steps.<sup>21</sup> Such hazardous conventional steps might include broadening the geographical scope of a conflict or hitting more-important and -valued targets, such as leadership or command and control facilities. For instance, the U.S. position in a conventional conflict might appear to be so dire and "extreme" that the only realistic options for deterring further adversary progress would be through conventional attacks on key enemy leadership elements, their strategic forces and command and control, or other among their most highly valued assets—or, on the other hand, through limited nuclear strikes. To a U.S. decisionmaker, especially one facing an adversary with survivable nuclear forces, conducting distinctly *limited* nuclear strikes might well seem *less* escalatory than mounting what an adversary might reasonably see as *unrestrained* conventional strikes.<sup>22</sup> In the context of such a conflict, it is therefore not impossible that some types of escalation to the nuclear level, especially if confined *within the conflict's existing geographical and other boundaries of escalation*, would be more effective and yet in important respects more restrained than dramatically widening or intensifying the war solely with conventional arms.<sup>23</sup>

But the second role of limited nuclear options is also important because it cannot be ruled out that the United States may lose at least some important elements of its wider conventional superiority in the coming decades, given the high demands placed on U.S. military capabilities by its far-flung extended deterrence commitments, the

<sup>21</sup> While this situation does not appear yet to have developed, Chinese progress in its anti-access and area-denial capabilities and the vulnerability of U.S. forces and especially striking power in the western Pacific, in part due to their concentration in and on a few bases and naval vessels, poses a worrying and, in some respects, intensifying problem.

<sup>22</sup> Indeed, the very shock of nuclear use would likely actually substitute, to some degree, for the value of the targets struck, allowing limited nuclear strikes to aim for somewhat *less* valued adversary targets, thus minimizing at least some of the escalatory and destabilizing aspects of such strikes.

<sup>23</sup> A historical example may help illustrate this point. The Yom Kippur War is probably the relevant historical conflict for contemporary consideration of limited nuclear options; it is the one example of a major war that was distinctly limited and that included the participation (albeit largely indirect) of multiple nuclear-armed states. There is substantial evidence that Israel at least considered employing the nuclear weapons it was alleged to have possessed during the 1973 war, especially if the military situation had continued to deteriorate and the Syrians in particular had made further advances into the Golan Heights and even into the Galilee and Israel proper. Discussions in senior Israeli political and military circles at this time included consideration of a number of severe forms of escalation in the event that the military situation continued to worsen, including not only nuclear employment but also strikes against Soviet aircraft supplying the Arab forces, a step that would have risked drawing the Soviet Union—and thus likely the United States as well—into the conflict. Had the Arabs advanced beyond the borders of pre-1967 Israel, these options would have been used to demonstrate to the Arabs and the Soviets the depth of Israeli resolve and to make clear that they had transgressed a genuine Israeli "red line." Had this scenario come to pass, there is substantial reason to think that a *limited* and primarily demonstrative Israeli use of a nuclear weapon—for instance either away from the battlefield or against Arab military units on the battlefield—could well have been *less* escalatory and *more* effective in achieving Israel's aims of repelling the Arab assault, restoring deterrence, and avoiding Soviet intervention than undertaking large-scale attacks on Soviet aircraft and/or against key Arab leadership or national targets. For more on this issue, see Elbridge A. Colby, Avner Cohen, William McCants, Bradley Morris, and William Rosenau, *The Israeli "Nuclear Alert" of 1973: Deterrence and Signaling in Crisis*, Alexandria, Va.: Center for Naval Analyses, 2013.

proliferation of advanced military technology (conventional and nuclear), the growth of Chinese power, and the impact of sequestration and budget tightening on the U.S. military. It was only a generation ago, after all, that it was considered settled wisdom that Warsaw Pact forces seriously overmatched NATO forces in Europe. This is not to say that such a deterioration of U.S. conventional advantage is inevitable, let alone advisable—it is neither and definitively not the latter—but simply that we cannot practically rule out the possibility that U.S. conventional superiority may significantly erode over the decades-long time frame over which serious nuclear policy decisions must be made. Should this come to pass, U.S. nuclear forces could reasonably be relied on to plug major holes in the overall U.S. defense posture, as they did during the Cold War.

Under either role, however—as a deterrent to nuclear escalation on the part of the adversary or to rectify local or general conventional inferiority—the best way to use nuclear weapons would be *discriminately*. Such use should be tailored in its nature or effects in such a way as to combine coercive impact with very evident limitation. In particular, such capabilities for limitation should afford the United States the ability to threaten harm to an adversary—and, more to the point, *further* harm if the adversary refuses to relent—while clearly avoiding endangering or damaging assets the endangerment or damaging of which would be most likely to provoke a spasmodic or full-blown nuclear retaliation from the adversary. The central idea is to demonstrate U.S. resolve and ability to employ nuclear weapons in ways that are perceptibly well short of large-scale and unrestrained use but that nevertheless pose a credible threat of increasing escalation and damage to the adversary. An adversary using nuclear weapons first would at best see the abundant foolhardiness or at least the exceeding dangers of further nuclear use; if it was the United States that felt compelled to use nuclear weapons first to stave off conventional disaster, the enemy would see the grave perils of continuing the assault.

The optimal way to make such limited nuclear use effectively coercive would be for the United States to enjoy escalation advantage against its enemy in a contest of its limited nuclear capabilities. Escalation advantage or superiority, the position in which one can escalate more effectively, controllably, and decisively than one's opponent, is crucial for determining who will come out ahead in a limited conflict. This is intuitive—the one who is in a position in which an intensification of the conflict will improve his position in some meaningful military or political way will have coercive leverage over his adversary. If the enemy can retaliate with a nuclear response of his own that negates the strategic effect of one's own nuclear strike or even worsens the situation, a limited nuclear deterrent's effectiveness is substantially reduced—especially if the enemy has deeper stakes in the conflict, since that should give him the advantage in a straight contest of resolve. Thus, the United States and its allies are better off if the United States possesses escalation advantage in the conduct of a limited nuclear war,

just as they are better off if the United States is superior in the conduct of a limited conventional war.<sup>24</sup>

The large and diverse U.S. nuclear arsenal is, of course, a natural source of potential escalation advantage. The sources of such superiority do not, however, lie solely in preponderance of force, which the U.S. nuclear arsenal provides over every opponent save Russia. Having greater military capability than an enemy but not being realistically able to use it because of political or other constraints largely if not entirely nullifies the advantages that derive from such superiority in capability. This was the quandary the United States faced in Vietnam. Rather, one is only in a position of genuine escalation advantage if one has ways of using one's military forces that improve one's military or political position vis-à-vis one's adversary *and* that one can realistically and sensibly employ in such a context.

This is why the ideal for the U.S. nuclear posture (and for the U.S. defense posture more broadly) is to provide capabilities that can be employed in a manner that is not only efficacious in attaining military objectives but also tailored. Tailoring—whether through limiting a weapon's destructiveness, shaping its physical effects, manipulating its trajectory, or otherwise controlling its nature, course, or consequences—is effectively equivalent to limiting the strategic consequences of a weapon's use.<sup>25</sup> And limiting the consequences of a weapon enables the United States to use it more precisely and thus to employ force more readily and effectively by reducing the military and political risks and collateral effects attendant to such use, above all by reducing the need to wage war in such a way that an enemy will see the U.S. way of war as akin to a life or death struggle.<sup>26</sup> By being able to wage war more discriminately, the United States can achieve at least some of its objectives, then, without prompting an adversary (most importantly a nuclear-armed one) to think that the United States is trying to destroy him, in turn reducing (although assuredly not eliminating) the risks of waging war against such an opponent.

This is particularly valuable in the emerging strategic environment, in which it is practically certain that Russia and probably China will have significant survivable nuclear forces and quite possible that rogue states, such as North Korea, will also gain

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<sup>24</sup> The Department of Defense AirSea Battle document commendably notes the importance of retaining “escalation advantage,” but the AirSea Battle effort appears focused on the conventional level of war. The document, for instance, refers to nuclear weapons only once, in reference to other missions of the U.S. armed forces. U.S. Department of Defense, AirSea Battle Office, *Air-Sea Battle: Service Collaboration to Address Anti-Access and Area Denial Challenges*, June 2013, p. i.

<sup>25</sup> For a related but broader discussion of the importance of tailoring deterrence, see M. Elaine Bunn, “Can Deterrence Be Tailored?” *Strategic Forum*, No. 225, January 2007, pp. 1–8.

<sup>26</sup> So, for instance, the U.S. military has made giant strides in reducing the likelihood of collateral damage by improving the accuracy of its missiles and bombs. More-developed U.S. command and control and intelligence, surveillance, and reconnaissance capabilities, meanwhile, allow a President to conduct more iterative, disaggregated military campaigns that are better adapted to particular political circumstances, rather than having to choose between launching an all-out attack or doing nothing at all.

survivable nuclear forces of their own (albeit smaller, less-sophisticated versions)—nuclear forces whose use the United States would very much want to avoid, especially against its own or ally's cities.<sup>27</sup>

But how can the United States seek to thread this needle between being able to use its nuclear weapons for meaningful effect and also limiting the escalatory impetus of such employment? The way for the United States most intelligently to employ nuclear weapons in a limited fashion in the case of either of the two types of conflicts would be to use the dramatic nature of even a limited employment of such weapons to place searing pressure on an opponent to de-escalate while avoiding triggering a major nuclear response on his part. The actual mechanics of effective limited nuclear use cannot be precisely anticipated in advance, naturally, given that any such use would need to be adapted to the particular constellation of political and military circumstances of a given conflict.

Broadly speaking, however, sensible limited nuclear use should seek to telegraph the dangers to the enemy of further escalation in the most visceral fashion. Such strikes should vehemently communicate (not least simply by the actual military use of a nuclear weapon) the clear message to the enemy that he had crossed a genuine red line, testify to the firm resolve to protect U.S. interests, threaten the possibility of further harm if the enemy refused to de-escalate, and clearly and credibly demonstrate restraint and the willingness to de-escalate should the enemy be willing to cooperate on terms that are acceptable to the United States and its allies. The purpose of such strikes would be, colloquially, to “shake the collar” of the adversary, making it clear to him in the most concrete way that he had crossed a red line and that further such actions on his part would very seriously risk further nuclear escalation while at the same time offering him a tolerable way down the metaphorical escalation ladder.<sup>28</sup>

A useful focus for U.S. limited nuclear use in such contests that would also impose a natural limiting factor would be to orient such capabilities toward contributing to gaining the upper hand or prevailing in the conflict that had provoked the nuclear escalation, for instance against enemy general-purpose forces engaged in combat with U.S. or allied forces in a confined theater of conflict, preferably away from the enemy's capital, leadership redoubts, and strategic forces and command and control assets. That is, such nuclear use would be integrated with the objectives and the conduct of the limited conventional war that had led to nuclear use in the first place. This would both advance the original objectives the United States was pursuing while linking U.S. nuclear use to an intuitive limiting logic—prevailing in the original conventional

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<sup>27</sup> It is important to point out that the fact that the enemy has survivable nuclear forces does not obviate the utility or benefits of escalation advantages. It does change them, however, by imposing constraints on what can be targeted and how far it is sensible to go in terms of attacking the enemy, but escalation advantages can still be exploited.

<sup>28</sup> For a similar view, see Henry A. Kissinger, *White House Years*, Boston: Little, Brown and Company, 1979, p. 622.

conflict.<sup>29</sup> If the United States possessed advantages in this kind of limited nuclear-conventional war, the unfolding advantage that would proceed from iterative U.S. nuclear use would impose intense (and ideally anticipatory) pressure on an adversary to come to terms. It would be especially useful in extended deterrence scenarios, since it can be presumed that, in such instances, the United States would want to rely on superior capabilities rather than on its greater will and firmer resolve, if at all possible.

Limited nuclear options, to be sensibly employable, would not only have to be capable of achieving meaningful military goals, however, but would also have to be able to exhibit qualities of restraint in a very noticeable fashion. Strikes might be limited, for instance, in terms of their destructiveness, the type of targets attacked, their number, and the geographic boundaries within which the attacks were carried out. A particularly logical way to limit collateral damage would be to confine any nuclear strikes, at least initially, to the geographical boundaries of the original conflict and to focus solely on military targets. And, to avoid triggering the enemy's use of his own survivable nuclear forces, strikes would clearly need to avoid the most valued assets of the adversary, again at least initially, such as leadership facilities and strategic forces and command and control. An absolutely essential constituent part of any such limited nuclear use would be to communicate as clearly and credibly as possible with the adversary, both to make clear the nature of the attack (both its effect and its limits) and to propose the conditions of de-escalation. Needless to say, such strikes would, by their very nature, require a coherent and practical political strategy to accompany them, one designed to entice the adversary to step back from his ongoing course of action by offering plausibly acceptable terms for settlement or, at the least, for de-escalation—a dignified way out.<sup>30</sup>

In the ideal, then, the capability to execute a range of tailored, discriminate, limited nuclear strikes should provide the United States with the ability to use its nuclear weapons iteratively, in a precisely controlled fashion, in ways that increasingly improve the U.S. position vis-à-vis an adversary—particularly with reference to the critical conventional conflict that provoked the escalation to the nuclear level in the first place.

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<sup>29</sup> It is assumed that limited nuclear use would only realistically arise as a serious and plausible option out of an existing conventional war. While it is theoretically possible that the United States could employ its nuclear forces in a limited fashion without a serious war first having broken out, it is exceedingly difficult to see how this could ever be a reasonable or rational decision.

<sup>30</sup> Veteran *New York Times* correspondent Richard Halloran likened this all-important element of allowing one's adversary a dignified way out to the Japanese kabuki function of the *hana-michi*. As Halloran put it,

The Japanese have a ritual called "hana-michi," which literally means "path of flowers" and in practice means to allow a defeated adversary to make a graceful exit. The term comes from the kabuki theatre. A trounced opponent, whether in a sword fight or social conflict, is permitted to dash down a ramp called the "hana-michi" running through the audience, to stop to flourish his sword or hands in defiance, and to disappear out the door.

See Richard Halloran, "Hanamichi," *Real Clear Politics*, January 17, 2010.

What kinds of scenarios would these capabilities be useful for? Obviously, we cannot predict the future with clarity or confidence, but, based on the above discussion, these scenarios might reasonably be grouped into three categories of increasing gravity: first, a conflict in which a nuclear-armed rogue state, such as North Korea (or, should efforts to prevent Tehran's acquisition of a nuclear weapon fail, possibly Iran), attempted to use a portion of its nuclear forces as a way of disabling superior U.S. capabilities or of short-circuiting such superiority by holding allied or U.S. cities hostage; second, a conflict with a major nuclear-armed power, such as China or Russia, in which the adversary sought to resort to limited nuclear use of its own to frustrate or diminish U.S. and allied conventional superiority; and, third, a conflict with a major nuclear-armed power, again such as China or Russia, in which the adversary was able to achieve at least local conventional superiority and in which it was the United States that wanted to use its nuclear forces to stave off conventional collapse or defeat.

The first category of scenario is probably the most plausible in the near term, given North Korea's advancing nuclear weapons and missile delivery capabilities and its consistently belligerent behavior. A scenario like this could unfold if a large-scale war were to break out between the United States and South Korea (and perhaps Japan and others) on one side and North Korea on the other. Assume that North Korea's strategic capabilities had developed to such an extent that it fielded something in the vicinity of two dozen or more nuclear missiles on mobile transporter erector launchers and possessed a resilient ability to control and operate them in a reasonably survivable fashion.

In such a context, the tide of conventional conflict would almost certainly turn in the favor of the United States and its allies, given their vastly superior capabilities, a fact of which the North Korean regime would be fully aware. In light of this, North Korea might well seek to use its nuclear weapons for coercive or deterrent purposes in the midst of the conflict, either for compellent effect, to achieve its ambitions in the conflict, or for more defensive purposes, such as to stave off defeat or even an attempt at regime change by the United States and South Korea.<sup>31</sup> For instance, on the offensive side, North Korea might seek to force an end to the conflict on grounds unfavorable to the U.S.–Republic of Korea (ROK) side by threatening to launch limited but damaging nuclear strikes; on the more defensive end, North Korea might threaten to use or might actually use its nuclear weapons if U.S. and ROK forces approached Pyongyang or leadership redoubts or if the United States launched major strike campaigns against leadership targets and/or North Korean nuclear forces.<sup>32</sup>

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<sup>31</sup> Fears that the United States was pursuing regime change would not be irrational, given the historical propensity of U.S. military campaigns to seek such a goal in conflicts with rogue states, for instance in Iraq and Libya and, to a lesser degree, Serbia. The United States thus needs to be prepared for hostile rogue states (and perhaps even major powers) to assess that it is pursuing regime change even in conflicts it may want to limit.

<sup>32</sup> For a similar analysis, see Lieber and Press, 2013.

In all cases, North Korea's operational approach would presumably be to launch or to threaten to launch a small number of nuclear attacks while withholding a sufficient number of controlled transporter erector launchers as an escalation reserve if the United States refused to relent or attempted a disarming strike. North Korea might start out by conducting nuclear strikes against military targets, particularly targets that would be lucrative in strengthening its position in the conventional war.<sup>33</sup> North Korea might also seek to drive a wedge in the coalition arrayed against it, for instance by targeting specifically U.S. rather than ROK forces and/or by shooting at targets in Japan (either U.S. or Japanese); natural targets could include bases on Okinawa and on the Home Islands (such as Yokosuka and Atsugi).

If the allies refused to come to terms or back down in the event of a first barrage of nuclear strikes or attempted to disarm North Korea's remaining nuclear capability, North Korea could prepare to launch at least a portion of its remaining nuclear forces against more highly valued targets, for instance, civilian areas in South Korean, Japanese, or even U.S. territory, such as Guam. A final, last-ditch capability could be reserved for a "Samson Option" for unrestrained use against the U.S. homeland.<sup>34</sup>

In this context, the United States *might* want to launch an attempt to destroy the North Korean regime—but it very well might not, given North Korea's possession of remaining survivable nuclear forces and the consequent huge risks and real possibility of great damage such an effort would entail. Rather, the United States would likely want to respond strongly to North Korea's actions but to do so in a way that kept the war limited. This is why the United States would profit substantially from having effective limited nuclear capabilities in this scenario. While it cannot be assumed that the United States would *actually* want to respond to North Korean nuclear use with a nuclear strike of its own, it is clear that it would want and indeed need to have the serious option to do so. Discriminate nuclear options would give the United States the ability to respond with vastly greater force than conventional options would offer and—of particular importance—to retaliate *in kind* to North Korean threats and/or use. The ability to respond in kind while also seeking to limit the destructiveness and escalatory aspects of nuclear use would be particularly valuable because it is near

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<sup>33</sup> These could include U.S. and/or ROK ground formations advancing in, into, or toward North Korea; U.S. or ROK air bases in South Korea; and/or U.S. naval vessels, especially aircraft carriers, in the waters around the peninsula, although the last would prove far more difficult for North Korea, given the targeting challenges.

<sup>34</sup> Brad Roberts rightly points out that an especially useful focus for U.S. missile defense is to make this strategy of iterative, controlled strikes against the United States more difficult. For an adversary like North Korea, missile defenses raise the bar for entry into this kind of strategic face-off considerably. See Brad Roberts, "Extended Deterrence and Strategic Stability in Northeast Asia," Tokyo: National Institute for Defense Studies, Visiting Scholar Paper Series No. 1, August 9, 2013, p. 11. Given the technological challenges missile defense efforts face even against less-sophisticated adversaries, such as North Korea, however, it would be imprudent to rely on them to eliminate this problem. Conventional disarming strikes, meanwhile, both risk triggering the very thing the United States would wish to avoid and have a distinctly uneven, if not poor, record in eliminating the threat from mobile missiles.

certain that North Korea, U.S. allies, countries likely to be indirectly involved or considering involvement (namely China), and indeed the world at large would be looking intently to see if the United States exhibited the resolve to respond to a nuclear attack against its forces, its allies, and perhaps even itself with a nuclear strike of its own. In particular, the United States would want to have nuclear options that it could exercise against North Korea in ways that would be seriously harmful to the North Korean regime but would also be credibly limited, since the United States would want to avoid triggering North Korean use of its “back pocket” ICBM capabilities. Such discriminate U.S. strikes could be launched against important bunkers holding valued regime assets, key military targets, and symbols of the North Korean regime while avoiding known leadership redoubts and strategic command and control; these strikes would be coupled with a strategic messaging campaign designed to persuade North Korea to settle on terms acceptable to Washington, Seoul, and Tokyo.

The second scenario, of a conflict with a major nuclear-armed power that sought to use its nuclear forces to counter U.S. conventional superiority in a regional contingency, would present a challenge for the United States in many respects similar to the one the first scenario posed but would make the utility of limited nuclear options even more clear. This is because the tantalizing option of attempting to disarm the adversary of his nuclear forces, while almost certainly too dangerous even in the parameters sketched out in the first scenario, would be positively foolish in the context of the second category, in which the United States was facing off against an adversary possessed of first-rate and survivable nuclear forces, like Russia or China. Response to limited nuclear use on the part of Russia or China would thus have to take the form of a limited strike rather than an attempt to disarm the opponent.

While the precise starting point of a war with a major power, such as China or Russia, cannot be predicted in advance and might change considerably as the strategic environment evolves in the coming decades, a scenario like this could unfold if the United States came to blows with China, for instance starting from a dispute over Taiwan or territorial claims in the western Pacific, or with Russia, for instance stemming from a fight over an Eastern European NATO member. Let us focus on the Chinese possibility. In the context of such a conflict, dynamics similar to the North Korean scenario could arise, in which U.S. conventional superiority could appear to be leading to a limited but still decisive and substantial U.S. victory, for instance over the autonomy of Taiwan or in a contest involving other territorial disputes in the western Pacific or South China Sea. The Chinese Communist Party might perceive such a defeat as jeopardizing its hold on power, especially in the Taiwan case, given the enormous investment of the regime’s legitimacy in incorporating Taiwan into the People’s Republic, or if Japan were perceived as having defeated China, given deep anti-Japanese sentiments among the Chinese populace.

In such a scenario, China might decide to attempt to use its nuclear forces to turn the tide of the conventional conflict by conducting a limited nuclear strike using

a strategy similar to that of North Korea in the first scenario—first threatening U.S., Japanese, and/or other allied or partner military forces or assets; then threatening allied or U.S. broader and possibly civilian areas in the western Pacific; and finally holding back survivable ICBM (and possibly submarine-launched ballistic missile) forces for strikes against the U.S. homeland.<sup>35</sup> Facing this threat, the United States would not have the practical option of disarming the Chinese capability to conduct such a limited strike plan, given both the sophistication and survivability of the Chinese nuclear force and the extreme escalatory risks such an attempt would pose.<sup>36</sup>

U.S. leaders would therefore most logically look to options that could deter China from embarking on this course or could persuade China to halt such a campaign while also minimizing the risks of escalation. Assuredly, the United States would look to conventional options to help address this need and might well include them in any retaliatory strike package. But conventional-only options might not be able to achieve the required degree of potency, given formidable Chinese air and missile defenses, and also might not be practical, especially if China used its limited nuclear strikes to disrupt the ability of U.S. conventional forces to operate effectively by striking key U.S. nodes in the western Pacific, such as Okinawa or Guam. Moreover, only looking to conventional options in the face of Chinese nuclear use would risk appearing irresolute and timorous. This, in turn, not only would risk inviting subsequent Chinese attempts to gain advantage from further nuclear use or threats of use but also would risk persuading allies (including allies also involved in the conflict itself) of the same thing, allies that might deem such a failure to resort to nuclear use as a failure of will and thus grounds for pursuing a separate course of action, including independent military steps or, conversely, concluding a separate peace with Beijing.

The best response for the United States might well then be to retaliate against Chinese limited nuclear use with limited nuclear use of its own. Such use would be most effective if it not only demonstrated the U.S. resolve to respond in kind to nuclear strikes against itself or its allies but also contributed to restoring the conventional advantages in theater that U.S. forces had earned through the conventional conflict and demonstrated that a further nuclear duel would be increasingly unfavorable to China—all while making clear to the Chinese that such nuclear use was *not* intended to disarm or decapitate them and, thus, that they had great incentives for restraint.<sup>37</sup> Logical targets for such U.S. strikes would be valuable theater-level command and con-

<sup>35</sup> For similar speculation, see Barry Watts, *Nuclear-Conventional Firebreaks and the Nuclear Taboo*, Washington, D.C.: Center for Strategic and Budgetary Assessments, 2013, p. 65.

<sup>36</sup> Doing so in the Russian case would be practically impossible, given the much greater size and superior sophistication of the Russian force.

<sup>37</sup> These objectives would be far harder to meet in the case of Russia, whose nuclear forces match those of the United States not only in size but also in sophistication. Here, U.S. objectives *in a nuclear exchange* would have to be more modest because the United States could not expect to gain as much from the relative balance of capabilities.

trol facilities, military formations or bases, strike platforms, naval forces, and the like. Again, this approach would logically need to be accompanied by a political outreach designed to seek to persuade Beijing to settle the conflict on acceptable terms or, at the very least, to forswear further employment of its nuclear arms.

The third category, that in which it is the United States that would want to use its nuclear forces to halt a serious deterioration of its position in a conventional fight, is currently the least probable of the scenarios. Nonetheless, it could well become more plausible with respect to China should the conventional military balance in the western Pacific continue to shift in Beijing's favor, whether due simply to the "catch-up" and geographical advantages an increasingly rich China enjoys in the competition for military superiority in the region; to a weakening of U.S. military power in the western Pacific stemming from serious cuts to the defense budget, malinvestment, and/or continued U.S. focus on other regions and missions (for instance on counterinsurgency operations in the Middle East); or to both. While such a dramatic shift in the conventional balance in the western Pacific is unlikely to happen in the near term, it is a realistic medium and certainly a long-term possibility—which are the time frames around which U.S. nuclear policy and posture should be formulated.<sup>38</sup> In the event such a shift came to pass and assuming the United States would want to maintain its strategic posture and alliance network in the Asia-Pacific region, the United States would naturally then want to consider the role of limited nuclear options in deterring potential Chinese exploitation of its conventional military advantages in the region. (It is worth noting that this would essentially be a reprise of the U.S.-NATO posture against the conventionally superior Soviet Union–Warsaw Pact during the Cold War.<sup>39</sup>)

An actual conflict falling into this category might, then, come to pass along lines similar to those discussed with respect to China in the second category—but with China, rather than the United States, gaining the upper hand in the conventional conflict. In a war, China might, for instance, be able to break down the U.S. "battle

<sup>38</sup> For a measured but sobering discussion of this possibility, see Robert O. Work and Shawn Brimley, *20YY: Preparing for War in the Robotic Age*, Washington, D.C.: Center for a New American Security, 2014.

<sup>39</sup> For the classic official statement of this posture, see NATO's "Flexible Response" statement: North Atlantic Military Committee, "Final Decision on MC 14/3: A Report by the Military Committee to the Defence Planning Committee on Overall Strategic Concept for the Defense of the North Atlantic Treaty Organization Area," January 16, 1968. The argument in this chapter mirrors this strategy in many respects—for instance, pp. 10–11:

Deliberate Escalation. Deliberate escalation seeks to defend aggression by deliberately raising but where possible controlling, the scope and intensity of combat, making the cost and the risk disproportionate to the aggressor's objectives and the threat of nuclear response progressively more imminent. It does not solely depend on the ability to defeat the enemy's aggression as such; rather, it weakens his will to continue the conflict. Depending on the level at which the aggression starts, the time needed for each escalatory action and reaction and the rate of success, escalatory steps might be selected from among the following examples provided they have not previously been used as part of a direct defensive system: (1) broadening or intensifying a nonnuclear engagement, possibly by opening another front or initiating action at sea in response to low intensity aggression; (2) use of nuclear defence and denial weapons; (3) demonstrative use of nuclear weapons; (4) selective nuclear strikes on interdiction targets; (5) selective nuclear strikes against other suitable military targets.

network” in the western Pacific by using its conventional strike forces (missile, air, and naval) and other capabilities to degrade or destroy key U.S. nodes, for instance, on Guam and Okinawa and at sea.<sup>40</sup> At the very least, such victories would indicate that the post-1945 U.S. supremacy in the Pacific had been decisively broken, with difficult-to-calculate but surely pernicious implications for the U.S. alliance posture and the regional order it has underwritten in the region. Furthermore, such Chinese military successes might enable Beijing to coerce U.S. allies and partners in the region, even to employ direct military force, including power projection capabilities, against them and against U.S. territories in the region. In this context, the United States might not have realistic or timely options for conventional response, particularly if U.S. military reserves and the underlying defense industrial base were not adequately funded and prepared beforehand. Meanwhile, some conventional options to escalate the conflict and convey that Beijing has transgressed U.S. red lines—for instance attacks against leadership targets in Beijing—might seem unduly escalatory.<sup>41</sup>

In this scenario, the United States would clearly want to have the option to resort to limited nuclear use to stem the advance of Chinese power. (Even more, it would want to have credible nuclear options available *before* the outbreak of war to impose a limiting influence on Chinese objectives and to reassure U.S. allies and partners that would likely be considering independent courses of action in the face of an increasingly powerful People’s Republic of China.) Such discriminate options would be designed to demonstrate U.S. resolve; threaten further escalation; and, ideally, frustrate the advance of Chinese forces or the ability of China to use its military forces to attack and coerce U.S. allies and partners. The last objective would be a natural focus for U.S. nuclear strikes, since it would both contribute to improving the U.S. situation in the conventional conflict while also constituting a natural limiting factor on U.S. nuclear use. The strategic purpose of such strikes would be not to achieve an elusive “victory” but rather to persuade Beijing to terminate the war on grounds tolerable to the United States. U.S. strikes would best be accompanied by the clear enunciation of a set of conditions that would lead to the cessation of U.S. nuclear use.

What implications does this all have for the current U.S. nuclear force? All things being equal, the more discrimination and tailoring potential the U.S. nuclear force provides, the more effective it should prove to be in a limited war scenario. And since the actual parameters of a scenario in which limited nuclear options would be a plausible option cannot be precisely anticipated, it makes sense for the nuclear force to provide as much discrimination and control as possible in terms of such criteria as

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<sup>40</sup> For discussions of the concept of a “battle network” and the challenge posed to U.S. mastery of this vein of conflict, see, among others, Barry D. Watts, *Six Decades of Guided Munitions and Battle Networks: Progress and Prospects*, Washington, D.C.: Center for Strategic and Budgetary Assessments, 2007, and Andrew F. Krepinevich, Jr., “The Pentagon’s Wasting Assets,” *Foreign Affairs*, July/August 2009.

<sup>41</sup> This would be a context in which limited nuclear use might seem less escalatory than major conventional escalation options.

destructiveness, accuracy, radioactive release, utility against various targets, and redundancy. Such versatility in the effects available from its nuclear force would give the United States a greater ability to employ these forces to gain escalation advantage over an opponent. In blunter terms, it would enable the United States to be *better* at limited nuclear war than our adversaries, in turn giving us the strategic-political upper hand.

The current U.S. nuclear force can provide a substantial degree of discrimination and control, and thus a potential for escalation advantage, in most plausible scenarios Washington cares about. The problem, however, is that technological and military developments are moving in directions that could undermine the U.S. force's ability to provide these attributes. For instance, the ability to carry out highly discriminate strikes would be significantly weakened if advances in potential adversary air defenses make the bomber leg of the U.S. strategic triad a less reliable means of attack or if the Air Force is unable to fund and procure a next-generation nuclear-capable bomber, given the particular value of the bomber force in providing discriminate options. In addition, an aging U.S. command and control infrastructure risks making the precise control and application of U.S. nuclear forces in the circumstances of a limited nuclear conflict indelicate at best and self-defeating at worst.<sup>42</sup>

What then might be done to improve this situation, especially over the longer term? While the pursuit of the attributes required to conduct limited, discriminate attacks needs to be weighed against the benefits of other attributes that cannot always be simultaneously served to the same degree, there are steps the United States can sensibly take to sustain and improve its potential to execute limited nuclear options. Procuring a nuclear-capable, next-generation bomber that can deliver a newly developed B-61-12 nuclear bomb against the most sophisticated adversary air defense networks is a logical step, despite the expense entailed in doing so. The United States could also remove the secondary component of the nuclear warheads mounted on one or two of the Trident II D5 submarine-launched ballistic missiles carried on each *Ohio*-class nuclear submarine (and its successor) to provide a lower-yield strike option on a U.S. strategic ballistic missile. The long-range standoff option missile, the replacement for the nuclear air-launched cruise missile, could also be given a lower-yield option or options. More controversially, the United States could develop a more-effective nuclear "bunker buster"—that is, a nuclear weapon specially designed to neutralize hardened and deeply buried facilities. Perhaps most important, however, the United States should modernize its nuclear command and control system such that it can allow national leaders to employ U.S. nuclear forces with a satisfactory degree of control, precision, and restraint while also providing the capability to communicate reliably with allies and adversaries, even in the midst of war and in the face of cutting-edge

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<sup>42</sup> For a (necessarily oblique) discussion of the need to modernize the nuclear command and control system, including to effectively control nuclear forces in conflict, see John R. Harvey, Principal Deputy Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, statement before the House Armed Services Committee Strategic Forces Subcommittee, May 9, 2013, especially pp. 6–7.

cyber and other threats. Specific weapons and weapon delivery capabilities would help improve the U.S. ability to wage a limited nuclear war—but it would absolutely require a refined command and control system. These improved capabilities for discriminate nuclear use can then be demonstrated—both to potential adversaries and to allies and partners—via command post exercises and occasional deployments, coupled with focused strategic messaging campaigns.

Beyond changes to hardware, however, the U.S. government can also strengthen its capabilities for adaptive and short-notice planning for nuclear scenarios, since effective limited nuclear warfighting absolutely depends on the intelligent and discriminate application of nuclear force. The U.S. government could also actively encourage a greater focus on the problems associated with the conduct of limited nuclear conflict among civilian and military defense officials and analysts and seek more concretely to integrate consideration of such problems into the tasking, development, and review of contingency plans for major theater conflicts, into U.S. military doctrine, and into the military requirements for delivery systems and nuclear weapons. Elements of the U.S. government beyond the Department of Defense should be included in efforts to try to anticipate the political aspects of a conflict in which highly limited nuclear strikes might be employed and how these political constraints would affect the conduct of such a war. Conclusions from such analyses should inform development and procurement of relevant systems, as well as nuclear force posture decisions. The basic point is that the U.S. government should begin to take the requirement to prepare itself for the very significant military capability and policy problems associated with planning for and conducting a limited nuclear war more seriously.

It should hardly need saying that care must be taken that such efforts not lead the U.S. government or, for that matter, any other government to look too sanguinely on the feasibility of controlling a limited nuclear war or the advisability of embarking on one. No one can know what that fateful crossing of the nuclear threshold—a threshold that has held, despite numerous adverse predictions, for almost 70 years—would entail, but we do know that the consequences could be disastrous, and quite possibly horrendous. As no less an authority on things military and strategic as Dwight Eisenhower pointedly observed,

Now, nothing can be precluded in a military thing. Remember this: when you resort to force as the arbiter of human difficulty, you don't know where you are going; but, generally speaking, if you get deeper, there is just no limit except what is imposed by limitations of force itself.<sup>43</sup>

The utmost caution should therefore be observed should the use of such a limited nuclear war posture ever be contemplated.

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<sup>43</sup> Dwight D. Eisenhower, “The President’s News Conference,” January 12, 1955.

But we must contemplate and prepare for limited nuclear war because, while nuclear weapons have chilled, they have not killed strategy. Nations and groups continue to seek advantage and gain in the manipulation of strength, weakness, risk, fear, and resolve. Strategies are therefore needed to ensure that the United States is on the favorable side of such encounters. And nuclear weapons, while they seem in their grotesque destructiveness the very antithesis of calculation, are nonetheless not immune from strategy either. To use them or to threaten with them successfully therefore requires that we do so strategically—in essence, that their use or threatened use be subject to some plausible rationality. And such rationality necessitates that they can be used in some way proportionate to the nature and scale of the contest—contemplated or actual. This is why it is important to plan for something as uncertain and menacing as a limited nuclear war.

Ultimately, however, both the point and the moral justification of preparing for limited nuclear use lie in the conviction that such readiness stands the best chance of convincing prospective adversaries that they stand little to gain and very much to lose if they truly cross the United States and that convincing them of that proposition is in turn the best way to avoid the great and very possibly catastrophic clash that would result if they were to test it. The point and justification for preparing for limited nuclear use lie, in other words, in the pursuit of the fulfillment of another of Eisenhower's dicta, that "the only way to win World War III is to prevent it."<sup>44</sup>

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<sup>44</sup> Dwight D. Eisenhower, "Radio and Television Address Opening the President's Campaign for Re-Election," September 19, 1956.

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