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EDITOR'S NOTE

Welcome to Volume 2, Number 1 of National Institute's *Journal of Policy & Strategy*—a quarterly, online, and peer-reviewed journal. In this publication we present trenchant analysis on important national security issues of the day; insightful interviews with key defense and national security experts; perceptive commentary on recently published books; thoughtful, scholarly perspectives on critical security issues from former leaders and strategists with world-renowned reputations; and proceedings from National Institute's online symposia series. For example, included in this issue's "Analysis" section is a seminal article from the late Colin Gray on "Great Powers and World Order." Also included is an analysis by Mark Mattox, National Defense University's Director of the Countering Weapons of Mass Destruction Graduate Fellowship Program, of "The *Jus Ad Bellum* Character of Nuclear Warfare"; an article on "The Long Path to the Current State of Sino-American Relations" by Joseph DeTrani, former Special Envoy for Negotiations with North Korea and Director of the National Counterproliferation Center; and a look at "Missile Defense in a Multipolar World" by James Bosbotinis, Harris Fried, and COL David Shank (USA, ret.). In addition, this issue includes interviews with VADM Robert Monroe (USN, Ret.), former Director of the Defense Nuclear Agency and Lt. Gen. Henry "Trey" Obering III (USAF, Ret.), former Director of the Missile Defense Agency. The proceedings from three online symposia (webinars) are also included in this issue: "Deterring Potential Chinese Aggression Against Taiwan"; "Deterrence Implications of the U.S. Withdrawal from Afghanistan"; and "U.S. Nuclear Employment Strategy." Our "Literature Review" section looks at Dmitry Adamsky's book, *Russian Nuclear Orthodoxy: Religion, Politics, and Strategy*; Ilan Berman's new book, *Wars of Ideas: Theology, Interpretation and Power in the Muslim World*; and Rush Doshi's book, *The Long Game: China's Grand Strategy to Displace American Order*. The "Documentation" section contains testimony by Brad Roberts on "China and the 2021 U.S. Nuclear Posture Review" before the U.S.-China Economic and Security Review Commission; excerpts from the Commission's 2021 report; and testimony by General Glen D. VanHerck (USAF), Commander of the United States Northern Command and North American Aerospace Defense Command. Finally, in the "From the Archive" section, you will find a keynote speech on deterrence and missile defense by former UK Prime Minister Margaret Thatcher delivered at a National Institute conference in 1998. Much of Baroness Thatcher's commentary resonates today, nearly a quarter century later. The editors welcome readers to this second issue of our *Journal of Policy & Strategy* and hope you find the information and perspectives it contains to be interesting, enlightening, informative, and valuable.





ANALYSIS

Editors' Note: The article below is by the late Professor Colin S. Gray and was brought to the editors' attention by Professor Gray's dear wife Valerie; she encouraged its publication. It was an unpublished manuscript that Professor Gray authored in January 2019. In it, Professor Gray offers a timeless essay on the broad sweep of history and the use of history for strategic analysis. His comments include keen observations that are wholly pertinent to today's international threat context. The editors are very pleased to be able to present this article in honor of Professor Gray and would like to thank Valerie Gray for bringing it to our attention.

GREAT POWERS AND WORLD ORDER: PLUS ÇA CHANGE...?

By Colin S. Gray

INTRODUCTION

An alternative title for this essay could be 'the perils of tripolarity'. I argue here that, notwithstanding the presence of large competitive nuclear arsenals, there will be little in the world politics of the twenty-first century that is systemically novel. This does not mean that our political leaders necessarily are well educated in the international hazards of their contemporary tasks. However, we and they may find some comfort in the thought that the human race has done it nearly all many times before, albeit not in identical detail, of course. There is but a single zone of grim, indeed potentially lethal, menace to the unity of the whole human experience: nuclear weapons. We are quite unable to solve the challenges that these pose because their vibrancy of hazard is driven by factors far outside the engines of destruction themselves. The nuclear danger to all humankind resides undoubtedly in our politics and the factors that drive them.

This essay welcomes some political and technical innovation, but is most concerned to provide understanding of the major threads to our history that have not altered in or from the past and appear unlikely to do so in the future. I endeavor to contextualize the security condition of the United States in the twenty-first century. In order to do that I will strive to explain historical dynamism, political impulse, and a persisting need for strategy.

HISTORY'S RHYTHM

So deeply encultured are we to place extraordinary value on novelty that it can be difficult to persuade an audience that difference is not in itself a quality much worthy of respect. The problem is substantially cultural. Our economy and its values are near wholly geared to revere change. This often is equated unreflectively with the morally commanding idea of progress, an idea that tends naturally and indeed inevitably to foreclose upon debate.

It can be difficult to oppose change. Because the idea often is deployed with positive connotations, it is assumed to be desirable. All change is not necessarily beneficial. The direction here is towards the claim that we appear incapable of learning from our history



what we should do in our own most vital interest. Because our historical narrative is not, and can never be pre-scripted, even substantial familiarity with a largely true version of the past should not be trusted to produce a reliable guide. We often find ourselves obliged to behave in unexpected ways due in large part to accident and circumstance. Great men and women are enabled to be such because opportunity so permits. This is not intended to demean, let alone dismiss, extraordinary achievement, but it is to help provide context for unusual achievement. There is what can be termed usefully a rhythm to history that is as unmistakable as, nonetheless, it is apt to mislead the unwary.

A common error is the severe misuse of history as a repository of analogous wisdom. Indeed, “analogous wisdom” is a contradiction in terms because one should never assume wisdom in analogy. Human circumstance is always too varied and dynamic for analogy to be reliable. So many and various, not to say possibly unexpected, are the influences generating behavior that analogy must always be deemed unsafe. This does not mean, however, that history cannot and should not be deployed as an educational aid to contemporary statecraft.

Whereas we are now confident of human innovation resting upon ever-expanding scientific discovery, it can be a surprise to many when they discover that a historical narrative is not one that demonstrates plausibly the achievements of much progress over the course of several millennia, say from the time of Herodotus to the present.¹ Human tools and toys have altered very notably, but it is more impressive to take note of the continuities in human behavior over the course of millennia. What we can hardly avoid noticing is the triumph of a continuity in patterns of behavior. Of course fashions change, sometimes suddenly and with widespread effect, but we should not coarsen our understanding of history by settling too easily into comfortable pseudo-historical falsehoods. Also we should not forget that all countries create national historical narratives that fall some way short of being a true record of what happened, why, and to whom! History is important, indeed it is essential to understanding of the present and to prudent anticipation of the future. Nonetheless much of what passes muster as history, while it will employ widely agreed facts, may have only a modest dependence upon reliable records from the past. Much historical fact is really not so, because history comprises the stories about the past we were taught, and in our turn teach, in school. The past is gone and cannot be recreated. In using history we have no choice other than to select the stories we choose to believe and to teach. Even with honest interest we can get it wholly wrong – and since ‘history’, meaning the past, is only played once, no magical social science method is capable of revealing what really happened. We must attempt to make use of history-based understanding.

If we take as a bold hypothesis the proposition that there has been a common logic of prudent necessity for all human existence, we can find a rich vein of reasoning on the vital subject of security. The argument will be that really it matters not for our understanding today just what were the local details, then, of time, geography, and culture. The whole historical narrative of our species is relevant today. The rhythm of history finds expression in the rise, decline, and fall of every great power without exception. It would be unreasonably

¹ Herodotus wrote his great work, *The Histories*, between the 450s and 420s BC.

brave to suggest that the multi-millennial rise and fall of once great powers will not apply to the United States also. No one can know what the future holds in detail. There are too many relevant variables to enable predictions. However, although we should not engage in a foolish hunt for analogies, there is, in some contrast, merit in a search for approximate parallels in situation. The historical record is filled abundantly with people and circumstances that bear notable resemblance to the challenges of today. The rhythm of history may not be highly melodic, but it will be discovered to be oft-repeated because of eternal concerns.

POLITICAL ORDER

Politics is the force that keeps relations between states constantly in motion. As explained by Harold D. Lasswell in *Politics: Who Gets What, When, How*, politics always is about efforts to achieve influence over others.² His terse, even austere, definition has never been bettered.

And though this concept of political order is understandably popular, its meaning is apt to be left obscure because empirical referents are anything but frozen in time and place. The theoretically-defined political order, is thus always fraying around its edges. For example, Imperial Rome and Persia contested for centuries the space that was very largely beyond the Euphrates. Much more recently, the Eastern Europe comprising the Baltic republics of Lithuania, Latvia and Estonia, and even the much larger states of Poland and now Ukraine, have changed hands politically because of the political consequences of shifting strategic fortunes between Russia and another great European power.

Global politics in this century are shaping up to be significantly tripolar in structure and dynasties. There is in progress a bipolar competition between the United States and China, with Russia rather hopelessly hanging on to a superpower status that the world probably knows today is gone and cannot return. This is not to deny the reality of an awesomely impressive Russian nuclear arsenal. In some ways ironically, however, the reality of a near superfluity of nuclear armament provides a staggeringly sharp contrast when considered in the full context of contemporary Russia. Bluntly stated, the new global bipolarity still emerging today does not include Russia, despite the reality of its nuclear arsenal. This is not to ignore or otherwise dismiss Russian nuclear weapons, but rather to argue that those military instruments have sharply limited utility in contemporary statecraft. Political order today, as was true in all periods in the past, cannot be founded and sustained on the basis of military power alone. There is no doubt that, for now, the United States remains alone in a class of true superpower, a status unshared with any competitor. Americans need to grasp the geopolitical fact that some 'others' are convinced that they too should advance to realize their 'Manifest Destiny'. America is by no means alone in this conceit. Both Russia and China are being urged to march onward and ever upward of course on the path to ever greater national greatness – sounds familiar? These continental competitors to sea-power America are both convinced that political authority flows reliably only from the barrels of more guns.

² Harold D. Lasswell, *Politics: Who Gets What, When, How?* (New York: Whitlesey House, 1936).

We dare not simply assume comfortably either that Russia will in effect, if not at all formally, retire from top-table political and strategic competition. Declining powers can be extremely dangerous. For a historical parallel with Russia's situation today and tomorrow, we need only cast our minds back a little over a hundred years to find an Austro-Hungarian empire not overly concerned about the contemporary balance of power in Europe. Vienna started the ball rolling that did not complete its travel until it had destroyed three great empires and wrought immense damage far beyond even that. The international reality of today is one that continues to depend critically upon American support. Although Russian troublemaking continues to be irritating to American governance at home and influence abroad, that menace is occasionally annoying background context when compared with the competitive threat now maturing, if not already mature, from Beijing.³ Notwithstanding the reality of the very large Russian nuclear arsenal, there is little doubt that China will pose a far more serious threat than Russia to the largely American world order. This new, indeed still emerging, reality comes to reshape fundamentally the actualities of global power politics.

U.S. competition with China can be further distinguished from the superpower's historical competition with Russia in the two challengers' cultural distinctiveness. Whereas Russia has long been known as proud, even boastful about, its brutality of strategy and policy, the contrast with China could hardly be greater. Whereas Russians are ever inclined to resort to force in matters of statecraft, by contrast it is characteristically Chinese to believe and act as if their international context is composed of rivals to themselves markedly less wise than are they. Americans have long grown comfortable in the certain knowledge that they are superior to others. It is a shock for them to learn that they are regarded as being inferior in culture and many other respects by their Chinese foes. It is quite difficult for American statecraft both to understand, let alone know how best to counter, a Chinese antagonist so culturally distinctive from the Russian competitor US policymakers have come to believe they understand reasonably well. Americans do not understand the limits, if any, of Chinese ambition, but they do understand these ambitions are likely to be very extensive.

THE STRATEGIC ENABLER

Military power becomes strategic power when it meets and is given meaning by politics. The current complex tripolar military balance is barely on the scales for appropriate weighing. Tripolarity inevitably is potentially unstable – two against one, but which 'one'? The Russians and Americans are both more than a little anxious about the political goals of Chinese military modernization; the military facts are not disputable, but whither is Beijing heading and why?

³ The Chinese challenge is analysed helpfully in Edward N. Luttwak, *The Rise of China vs. the Logic of Strategy*, (Cambridge, MA: Belknap Press of Harvard University Press, 2012); and Eliot A. Cohen, *The Big Stick: The Limits of Soft Power and the Necessity of Military Power*, (New York: Basic Books, 2016), ch.4.

There is no serious room for doubt about the most probable goal for Chinese competitive effort. Notwithstanding the nuclear complication, China anticipates that they will be the defining power of the twenty-first century, much as the sixteenth century saw Spain on top of the bevy of squabbling states, to be succeeded by France in the eighteenth century, Britain and Russia in the nineteenth, and the United States in the twentieth. Extraordinary economic strength always enables and motivates political ambition. Rise, decline, and eventual fall has been a rhythmic reality throughout the whole of our past.⁴ This is not a narrative that has to be interrupted by major wars, though often that has been the case. When the balance of a familiar pattern in the relations of states alters, or when deep anxiety is felt widely over the probability of an adverse shift in power relations, the world becomes very dangerous. Unduly great 'greatness' breeds feelings of danger abroad, and inevitably the forging of attempts at countervailing alliance.

Because of the now familiar nuclear peril, we can assume that political leaders in the three superpowers would be tempted seriously to play a game of nuclear 'chicken' in order to frighten an adversary into agreeing to a disadvantageous crisis settlement. However, there is some reason to be anxious lest Russian or Chinese leaders should have to meet domestic crises for which they, or more particularly their political systems, are ill prepared. Both Putin and Xi are probably aware that they do not have a robust domestic environment capable of withstanding much bad news. Often the U.S. forgets that the rather messy and seemingly inefficient American political system yields immense political and consequently strategic advantage over both Moscow and Beijing. The domestic ability, indeed duty, to 'throw the rascals out' after four years, is a priceless competitive asset when contrasted with the rigidities and vulnerabilities of the political systems that blight our superpower competitors.

CONCLUSION

Four main points have been advanced in this essay:

- First, all strategic activity has political meaning essential to its nature.
- Second, our historical narrative should be regarded as motion in rhythm. We humans repeat ourselves, though not in a regular way or hardly at all in detail.
- Third, global political order is organized and policed more or less closely by the superpowers of the day. At present there are three such powers – the United States, Russia and China. This number will reduce to two, as Russian domestic weaknesses affect and effect systemic changes in policy. It is increasingly possible that China alone may enjoy the benefits of superpower, but her domestic fragilities are likely to compel

⁴ Paul Kennedy, *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000*, (New York: Random House, 1987), remains indispensable; as does F.R. Bridge and Roger Bullen, *The Great Powers and the European States System, 1814-1914*, 2nd edn. (Harlow, UK: Pearson Education, 2005), esp. ch.1. The latter offers unequalled explanation of vital historical context.

limitations on official ambition. Similarly, it is possible the long period of American leadership for international security on a global scale is reaching the end of its domestic tolerability.

- Fourth, great economic strength always finds expression in great military power.

In some respects these conclusions are notable for their familiarity. They were as true for all periods in the past as they will be for the future also. There is a unity to our entire human narrative, both the desirable and the other.

Colin S. Gray was a co-founder of National Institute for Public Policy and served as its first president. Dr. Gray had an unparalleled career as a leading scholar and advisor to U.S. and British governments. He authored more than 30 books and 300 articles, many of which continue to be read by professionals in the field and are required readings in university courses.





ANALYSIS

THE *JUS AD BELLUM* CHARACTER OF NUCLEAR WARFARE

By John Mark Mattox*

Although rudiments of what has emerged as the western just war tradition are traceable at least as far back as Aristotle,¹ the now well-known distinction between “*jus ad bellum*” and “*jus in bello*” is of surprisingly modern origin.² *Jus ad bellum* is the cover term for the generally recognized, individually necessary, and, in theory at least, jointly sufficient, conditions under which legal and moral permission exists for the prosecution of war. *Jus in bello* covers a complementary concept, namely, the legal and moral bounds within which war may be justly prosecuted. Although Latin nomenclature may provide a veneer of antiquity,³ and although just war pronouncements at least as far back as Augustine may be more or less conveniently binned under these two headings,⁴ the headings themselves had no currency before the Interwar period. Neither is mentioned, for example, even in the 1899 or 1907 Hague Peace Conferences, whose ostensible aim was, *inter alia*, to codify the law of war.⁵ Nevertheless, since the end of World War II (and, coincidentally, the beginning of the nuclear era), much of the literature on the legality or morality of war (not to equate the two) has been expressed in *jus ad bellum* and *jus in bello* terms.

Because questions surrounding the choice of weapon and the manner in which a weapon may be employed assume that the decision to go to war has already been made and that a concomitant legal and moral justification for the war has already been rationalized if not proffered, it seems natural, *prima facie*, to assume that questions of nuclear weapon employment—or any weapon, for that matter, should fit neatly—perhaps even completely—under the *jus in bello* rubric. However, the decision to employ nuclear weapons is no ordinary decision, and nuclear weapons themselves are not just “any weapon”; and any characterization of them as “ordinary” or “conventional”—only bigger—is bound to produce a distorted understanding of not only where they belong in the *jus ad bellum/jus in bello* construct, but also the role they play on the battlefield and in the world. To illustrate: Speaking to a 1200-student audience at Columbia University in 1959, former President Harry S. Truman called the decision to drop the atomic bomb on Japan “not any decision you

* The views expressed herein are those of the author and do not necessarily reflect those of the U.S. Government.

¹ For what is likely the earliest recorded western source of for the words “just war,” see Aristotle, *Politics* Book I 1256b21–5 in *The Complete Works of Aristotle*, vol 2 (Princeton: Princeton University Press, 1985): 199.

² Robert Kolb, “Origin of the twin terms *jus ad bellum/jus in bello*,” *International Review of the Red Cross*, No. 320 (September–October, 1997): 553.

³ *Ibid.*

⁴ For an extended treatment of this point, see *Saint Augustine and the Theory of Just War* (London: Continuum, 2006), by the present author.

⁵ See *The Proceedings of The Hague Peace Conferences*, Translation of the Official Texts, prepared in the, Division of International Law of the Carnegie, Endowment for International Peace, under the supervision OF James Brown Scott, Director: The Conference of 1899, Parts I–IV; The Conference of 1907, Vols I–III (New York: Oxford University Press, 1920).



had to worry about. It was just the same as getting a bigger gun than the other fellow had to win a war and that what it was used for. Nothing else but an artillery weapon.”⁶ This is a remarkable comparison for a former a World War I field artillery battery commander-turned-President of the United States to make. During the period of U.S. involvement in World War I—April 1, 1917–November 11, 1918, France produced 149,827,000 artillery projectiles; Great Britain, 121,739,000; and the United States 17,260,000.⁷ During World War I, the German field artillery alone is said to have fired 222 million projectiles.⁸ However, not a single one of those projectiles, or perhaps even all of them combined, produced the history-altering consequences of the single nuclear weapon dropped on Hiroshima. A somewhat more illuminating characterization of nuclear weapons comes from the same President Truman as he addressed the nation 14 years earlier:

Sixteen hours ago, an American airplane dropped one bomb on Hiroshima . . . That bomb had more power than 20,000 tons of T.N.T. It had more than two thousand times the blast power of the British “Grand Slam” which is the largest bomb ever yet used in the history of warfare. . . It is an atomic bomb. It is a harnessing of the basic power of the universe. The force from which the sun draws its power has been loosed against those who brought war to the Far East.⁹

If, in fact, nuclear weapons were “[n]othing else but an artillery weapon”¹⁰—just like the hundreds of millions of other artillery projectiles produced or fired during World War I, the principles of *jus in bello* would arguably be adequate to circumscribe all factors associated with the decision to employ them. On the contrary, however, not only Truman’s August 6, 1945, description but indeed the entire history of the nuclear age suggests the inadequacy of any attempt to analyze the propriety of nuclear weapon employment in *jus in bello* terms alone. Indeed, far from being merely *jus in bello* weapons, nuclear weapons may be best understood as *jus ad bellum* weapons with enormous *jus in bello* and *jus post bellum* implications.

THE UNIQUE NATURE OF NUCLEAR WARFARE

Nuclear weapons are unique in every meaningful respect: in terms of the materials from which they are constructed, the exacting engineering techniques and reliability standards

⁶ Robert H. Ferrell, *Harry S. Truman A Life* (Columbia, Missouri: University of Missouri Press, 1994): 214.

⁷ Benedict Crowell, *America’s Munitions, 1917–1918* (Washington, D.C.: Government Printing Office, 1919): 33.

⁸ Dieter Storz, “Artillery,” in 1914-1918-online. *International Encyclopedia of the First World War*, ed. by Ute Daniel, Peter Gatrell, Oliver Janz, Heather Jones, Jennifer Keene, Alan Kramer, and Bill Nasson, issued by Freie Universität Berlin, Berlin 2014-12-16. DOI: 10.15463/ie1418.10510. Translated by Reid, Christopher, <https://encyclopedia.1914-1918-online.net/article/artillery>, accessed 6 April 2021.

⁹ Harry S. Truman, “August 6, 1945: Statement by the President Announcing the Use of the A-Bomb at Hiroshima,” UVA Miller Center, Presidential Speeches, Harry S. Truman, <https://millercenter.org/the-presidency/presidential-speeches/august-6-1945-statement-president-announcing-use-bomb>, accessed 6 April 2021.

¹⁰ Robert H. Ferrell, *Harry S. Truman A Life* (Columbia, Missouri: University of Missouri Press, 1994): 214.

they require, the effects they produce, the safety, security, and operational procedures that surround them, the personnel clearance standards and procedures necessary to grant access to them, and even more to the point, their essentially political character, as well as the legal and moral considerations that come to the fore whenever the question of their employment is raised. Indeed, they are unlike anything else heretofore seen in the history of warfare.

Not only nuclear weapons but even the idea of nuclear warfare itself falls into a category all its own. Any effort to equate war without nuclear weapons and war with nuclear weapons tends toward absurdity: The decision to employ a nuclear weapon is not (*à la* Truman 1959) merely the case of a tactical decision for a conventional war in which a larger-than-usual explosion occurs. Rather, it is (*à la* Truman 1945) a world-changing and history-changing event. The existence of nuclear weapons is itself world-changing. As a result, every conflict of the past three-quarters of a century has occurred, to one degree or another, in the shadow of the reality that, because nuclear weapons exist, hostilities must remain below a threshold that would not inspire the question of their employment.

For the argument which follows, an apparently tedious linguistic distinction is worth thoughtful attention: Although the phrases “nuclear use” and “nuclear employment” are not applied consistently in academic literature, one might profitably stipulate “nuclear use” to refer simply to the fact that nuclear weapons exist: To possess them is to “use” them. The phrase “nuclear employment” then can be reserved to refer to the case in which a nuclear weapon is detonated in military operational setting (as opposed to a test setting). Consistent with this distinction, it may be said that the United States has “used” nuclear weapons ever since Ju, 1945 (in that it has tested them or maintained them as tools of deterrence) but that it has not “employed” nuclear weapons since August 9, 1945, when it dropped the bomb that destroyed Nagasaki, Japan. This distinction, while nuanced, is hardly trivial. To “use” a nuclear weapon is not the same thing as to “employ” a nuclear weapon, and vice-versa. While one might correctly argue that the same distinction is possible with any weapon system, one must at the same time admit that—just like the artillery projectiles of World War I—the possession of many thousands of bayonets, machine gun bullets, long-range guided missiles, etc. does not carry with it the transformative effect that the possession of even one nuclear weapon does. That “transformative effect” of nuclear weapon possession manifests most dramatically and immediately in the way in which the possessor is regarded by the international community, and particularly by the possessor’s historical adversaries. When a state acquires a nuclear weapon, the entire world takes grave notice. That state’s “use” of nuclear weapons begins immediately, and with it, the awful possibility of the weapon’s “employment”. Notice, importantly, that “use” thus described falls completely outside the purview of *jus in bello* because the principles of *jus in bello* do little to illuminate the role that nuclear weapons actively play in the international sphere as soon as their possession is known.

In what follows, we shall examine each *jus in bello* and *jus ad bellum* principle, in turn, with an eye toward establishing the thesis that the decision to employ a nuclear weapon is in reality a *jus ad bellum* decision, and not one that belongs solely in the realm of *jus in bello*.¹¹

NUCLEAR WEAPONS AND *JUS IN BELLO*

Imagining what could be meant by nuclear weapons in the context of *jus in bello* is a useful exercise, if for no other reason than to observe the inadequacy of *jus in bello* for comprehending all aspects of the decision to employ them. The *jus in bello* rubric is widely recognized as including two principles: proportionality and discrimination.

(Micro) Proportionality. One of the unfortunate consequences of speaking of proportionality under both *jus ad bellum* and *jus in bello* is the tendency to fall prey to the fallacy of equivocation by assigning *jus ad bellum* characteristics to proportionality in a *jus in bello* context and vice-versa. The proper distinction between the two may be clarified by conceiving of *jus in bello* proportionality as “micro” proportionality and *jus ad bellum* proportionality as “macro” proportionality. (Micro) proportionality is best understood in terms of the famous definition of “prohibitory effect”, which enjoins belligerents to “refrain from employing any kind or degree of violence which is not actually necessary for military purposes.”¹²

While it is possible that this characterization of (micro) proportionality could prove theoretically adequate for adjudicating both single-point nuclear targets not a part of a large-scale nuclear attack and massive attacks with cataclysmic consequences, the true extent of that theoretical adequacy is far from clear. Even the employment of a single (and by modern standards, comparatively low-yield) nuclear weapon on Hiroshima and Nagasaki respectively has spawned an enormous literature disputing the claim that these attacks or others like them could be understood as “proportional” in any meaningful sense. That nuclear weapons could be employed successfully to attack any of a variety of high-priority targets—some of which could be destroyed in no other way—is beyond dispute. Whether the technical necessity to employ a nuclear weapon, for lack of other means, makes the attack proportional is a different question altogether. However, even if a satisfactory answer could be rendered, that does not mean that (micro) proportionality reveals very much of importance about the true nature of nuclear weapons. That is to say, the justification on technical grounds that the employment of a nuclear weapon was (micro) proportional would

¹¹ To be clear, nuclear weapons, and the states that might employ them, are fully subject to the laws of war and, to that extent, proper objects for *jus in bello* discourse. At issue here is the inadequacy of *jus in bello* principles alone to understand the nature of the decision to employ nuclear weapons, because any consideration of their employment must also address moral, legal, and policy matters beyond the campaign, operational, and tactical context—and hence, beyond the scope of *jus in bello*. The author is indebted to his colleague Dr. Justin Anderson of National Defense University for this clarifying insight.

¹² Department of the Army Field Manual (FM) 27-10, *The Law of Land Warfare* (Change 1) (Washington, D.C.: Government Printing Office, 15 July 1956): 3.

do little to satisfy far larger questions such as those required to justify the consummation of a world-transforming act of violence.

Discrimination. The principal moral problem with weapons describable as “weapons of mass destruction” is the difficulty associated with their being employed in a way that either limits collateral damage to a reasonably justifiable degree or avoids it altogether. As nuclear weapons are widely regarded as the quintessential “weapon of mass destruction” and by some accounts, the only thing truly describable as a “weapon of mass destruction,”¹³ the problem of discrimination vis-à-vis nuclear weapons becomes especially difficult. Those who argue for the alleged ability to employ nuclear weapons discriminately find themselves forced to appeal to a fairly limited set of scenarios, such as an attack on a naval formation in the middle of the ocean or of a terrestrial military formation far removed from persons or things that are not proper objects of targeting and possibly involving the employment of a weapon of very low yield. While these cases are possible, they are by no means the ones that precipitate the only concerns over nuclear weapons. The long-acknowledged effects of lofting radioactive waste into the atmosphere to be carried to locations far from the target raise serious questions as to whether all but the smallest of nuclear weapons employed in the most isolated locations could meet the requirements of reasonable discrimination. But even if those requirements could be convincingly met on technical grounds, the same problem arises for discrimination as for (micro) proportionality, namely, the question of whether these measures provide adequate justification for nuclear weapon employment—any more than a technical explanation of how a surgeon used a chain saw to perform open-heart surgery does to illuminate why even a very skillful surgeon was using a chain saw in the first instance.

Good Faith. While most accounts of *jus in bello* present a complete rendering of the subject as embracing only (micro) proportionality and discrimination, a third principle—good faith, which has just war theoretical roots that extend even beyond Augustine to as early as Ambrose and Cicero¹⁴—warrants an inclusion in any comprehensive consideration of *jus in bello*. It is, of course, that belligerents will not violate the shared expectations, to which long tradition has given rise, as to the acceptable boundaries within which to prosecute war and by that constraint to avoid acts that an opponent could rightly regard as perfidious or treacherous.¹⁵

What exactly the “good faith” employment of a nuclear weapon might entail is difficult to say. For example, if, by “good faith” one means to serve public notice of intent to employ the weapon, that declaration (as will be discussed below) is probably better understood as an act in response to a *jus ad bellum* requirement rather than a *jus in bello* one. If by “good faith” one means “with the best of intentions”, that too is better understood as an act in response

¹³ See, for example, Victor W. Sidel and Barry S. Levy, “Weapons of Mass Destruction” in Stella R. Quah, ed., *International Encyclopedia of Public Health*, Second Edition (Academic Press, 2017), <https://doi.org/10.1016/B978-0-12-803678-5.00491-4>.

¹⁴ John Mark Mattox, *Saint Augustine and the Theory of Just War* (London: Continuum, 2006): 18, 23, 64, 65, 84, 85.

¹⁵ For an extended discussion, see John Mark Mattox, “The Moral Limits of Military Deception”, *Journal of Military Ethics* Vol. 1 No. 1 (2002): 4-15.

to another *jus ad bellum* requirement, namely, right intention. In any case, one sees yet again the inadequacy of appealing to *jus in bello* principles alone to provide a moral or legal case in favor of nuclear weapon employment.

***Jus in bello*—Summary.** The foregoing critique of the attempt to apply *jus in bello* principles alone to the nuclear employment decision should not be understood as merely a veiled attempt to advocate for nuclear abolition; it is not. Rather, the aim of the critique is to point out the theoretical inadequacy of the *jus in bello* framework for the task. The principles of (micro) proportionality, discrimination, and good faith, important as they are, contemplate the constraint of conventional warfare and not the extraordinary conditions under which one might expect to encounter nuclear warfare, the most extreme form of warfare presently imaginable.

With respect to extremes in war, one need only recall the no-nonsense observation of Clausewitz that “To introduce the principle of moderation”—the central aim of *jus in bello*—“into the theory of war itself always leads to a logical absurdity” because “If one side uses force without compunction, undeterred by the bloodshed it involves, while the other side refrains, the first will gain the upper hand. That side will force the other to follow suit; each will drive its opponent toward extremes, and the only limiting factors are the counterpoises inherent in war.”¹⁶ Ironically, what Clausewitz describes sounds even more *apropos* for nuclear warfare, about which he knew nothing, than it does for conventional warfare, about which he knew a great lot. One might argue that Clausewitz’s account suffers from a profound lack of nuance. However, in the world of nuclear employment (as opposed to the world of precisely calculated bluff and posturing that is so characteristic of the world of nuclear use), one finds little if any nuance. In that world, what difference would *jus in bello* principles make to anyone except the coterie that seeks to explain nuclear weapon employment as attack by means of just another “artillery weapon”.

In sum, *jus in bello* is, both theoretically and practically, an inadequate context for dealing with the vexing legal and moral issues that accompany the question of how, when, and whether to employ a nuclear weapon. What might suffice for adjudicating the question of whether to authorize the launch of a precision-guided air-to-ground missile on the attack of a discrete target in, say, the deserts of North Africa or Central Asia, is simply insufficient for nuclear warfare. For that purpose, one must turn to *jus ad bellum*.

NUCLEAR WEAPONS AND *JUS AD BELLUM*

Two logical possibilities exist for scenarios involving a nuclear weapon: a war intentionally begun with nuclear weapons (hereafter Case #1) and the employment of a nuclear weapon in a war already begun (hereafter Case #2). *Prima facie*, Case #1 may more clearly point to the need for a *jus ad bellum* adjudication than does Case #2. However, in important ways, both cases involve what is effectively the start of a “new” war. Case #1 is clearly new, but

¹⁶ Carl von Clausewitz, *On War* (1832), ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1984): 1:1:3.

Case #2 involves such a watershed event as would radically alter the dynamics of the international system—including the system of laws and treaties pertaining to war in general and nuclear weapons specifically, that Case #2 would, for all practical purposes mark the beginning of a new kind of conflict—one informed by the extraordinary case of Hiroshima and Nagasaki but otherwise without precedent. This becomes clear as one assesses the explanatory power of principles of *jus ad bellum*¹⁷ in the case of nuclear weapon employment. Moreover, reference to these two cases highlights the fact, sometimes overlooked, that a war judged to be just under *jus ad bellum* principles can cease to be just if the reasons that gave rise to that adjudication cease to obtain—or, perhaps more to the point, if the reasons that gave rise to that adjudication do not clearly justify the elevation of conflict to a new and unprecedented level, such as nuclear war. (One should, therefore, be wary of the shoulder-shrugging explanations of those—especially among the world’s autocrats—who would argue that because the move from conventional to nuclear warfare is simply a natural progression toward extreme of the kind identified by Clausewitz, it does not require additional legal or moral justification.)

Just cause. The undisputed *sine qua non* of all *jus ad bellum* discourse, irrespective of author, is the principle of “just cause”. A contestant must have a recognized just cause before engaging in interstate violence. While one may dispute precisely what causes may be considered “just,” there is no historical dispute over whether a just cause must be established anterior to resorting to war. In the case of nuclear weapons, this question arises anew regardless of when they may be introduced into a conflict. That is to say, whether the war is contemplated to begin with a nuclear strike (an example of Case #1), or whether the war has already begun, as in the case of World War II (an example of Case #2),¹⁸ the same question comes to the fore: “Does there exist a just cause for taking an action which, by itself, will serve to undo the many-decades-old and well-established taboo against nuclear weapon employment, violate the spirit and intent of treaties governing nuclear weapons,¹⁹ elevate violence in warfare to a level not seen since Nagasaki and essentially unprecedented in human history (in the single employment of a single weapon—that question being magnified exponentially if the employment of multiple nuclear weapons in a single attack is contemplated), and completely alter the human understanding of the limits to application of

¹⁷ While the traditional list of *jus ad bellum* principles varies from author to author and most lists are shorter than the one which follows, the present author has selected a longer list of principles with an eye toward providing a somewhat higher-resolution argument than would obtain with a less nuanced list.

¹⁸ The reference here to World War II is made with some reluctance because, it may be argued, the bombing of Hiroshima represents a special legal, moral, and philosophical case. At that time no legal or moral precedents existed for nuclear weapon employment, and the idea of “nuclear deterrence” did not and indeed could not yet exist. Therefore, the decision to drop the bomb was necessarily made in what was, relatively speaking, a conceptual vacuum. This, however, did not prevent pressing and poignant legal and moral questions from being raised; and it is on the strength of this latter point that invocation of the example seems warrantable.

¹⁹ The spirit and intent of the relevant treaties is typically set forth in their preambles. Consider, for example, these sentiments from the 1972 Antibalistic Missile Treaty: “. . . Proceeding from the premise that nuclear war would have devastating consequences for all mankind. . .”; or from the 1991 Strategic Arms Reduction Treaty: “. . . Conscious that nuclear war would have devastating consequences for all humanity, that it cannot be won and must never be fought. . .”.

violence in warfare?" For present purposes, the answer to that question is unimportant. What is of great importance is the recognition that the question is a *jus ad bellum* question and not a *jus in bello* one.

Comparative justice. Closely allied to the principle of just cause, comparative justice requires a dispassionate assessment of whether the balance of justice weighs so heavily in one's favor as to significantly outweigh the legitimate claims of one's adversary. After all, no disputant should be expected to argue that it intends to resort to war as its *ultima ratio* because to do so is unjust: All disputants will claim justice to weigh in their favor. The question of whether to employ a nuclear weapon would amplify that necessity manifold. As with just cause, the question of comparative justice would impose itself whether with respect to Case #1 or Case #2.

Right intention. While one might successfully argue that if the question of whether the decision to employ, for example, a precision-guided air-to-ground missile meets the *jus in bello* requirements of (micro) proportionality, discrimination, and good faith it does not matter whether that decision is made with right intention, a successful argument of that kind is far more difficult to imagine with respect to nuclear weapons. Whether one wishes it to be so or not, humankind has invested so much emotional energy in questions of intent associated with nuclear weapon employment and into the legal and moral aspects of the same that to ignore the question of right intention vis-à-vis nuclear weapon employment would universally smack as inexplicable. The very unavoidability of the question of intention indelibly brands, therefore, nuclear weapon employment as a *jus ad bellum* issue, all satisfaction of *jus in bello* questions notwithstanding.

(Macro) Proportionality. "All relevant factors considered, will the decision to go to war result in a greater balance of happiness and a lesser balance of pain for the totality of the relevant population, with each member of that population counting as one and no more than one?"²⁰ Nowhere could this utilitarian calculus find greater perspicuity than with nuclear weapons, with respect either to Case #1 or Case #2. Nuclear weapons represent the limit test case for all questions of proportionality in war, such that the *jus in bello* conception of (micro) proportionality becomes completely subsumed by the corresponding *jus ad bellum* conception. Of course, Case #1 inherently requires that nuclear weapon employment be evaluated in terms of (macro) proportionality. However, recalling that a war can cease to be just if it ceases to fulfil the requirements of *jus ad bellum*, the decision to employ a nuclear weapon would likewise require evaluation in (macro) proportionality terms in Case #2. This is so because Case #2 marks a fundamental change to the parameters of the war. Note again that these parameters cannot be adequately accounted for merely by the calculations of targeters. Even the nuclear attack of an isolated target that ostensibly met all *jus in bello* criteria would so "up the ante" of international politics that it would likely precipitate

²⁰ This is, of course, a tailored version of John Stuart Mill's "Greatest Happiness Principle", presented here in the form of a question. See John Stuart Mill, *Utilitarianism*, Reprinted from *Fraser's Magazine*, Seventh Edition (London: Longmans, Green, and Co., 1879), Chapter 2, para 2.

questions as far removed from the target area as the status of established nuclear security alliances.

Last resort. The first question to be asked of any military advisor recommending nuclear weapon employment will inevitably be, “What are the alternatives?” In the minds of those in whom the employment decision resides, nuclear weapons will always represent the limit case, the last resort. To this point, the publicly stated policy of the North Atlantic Treaty Organization is instructive: “The strategic [i.e., nuclear] forces of the Alliance, particularly those of the United States, are the supreme guarantee of the Alliance’s security.”²¹ “Nuclear weapons are unique, and the circumstances in which NATO might contemplate the use [meaning, of course, “employment” as defined herein] of them are extremely remote.”²² Even though the policy asserts that “if the fundamental security of any Ally were to be threatened, NATO has the capabilities and resolve to defend itself – including with nuclear weapons,”²³ the foregoing makes clear that such resolve would manifest itself as the last—not the first—resort. Whether they would ever be employed for war fighting is quite beside the point; their employment would always be something very closely approximating a last resort, even if the point of last resort were quickly reached. In a similar vein, *jus ad bellum* principles are political principles involving political questions—not military principles involving military questions. The primarily political character of nuclear weapons, coupled with their close identification with questions of last resort, serves to amplify the point that the decision to employ them is a *jus ad bellum* decision.

Reasonable probability of success. Nuclear employment decisions will invariably include as a measure of success the question, “Will employment accomplish the desired political objective?” That objective may be to stop a conflict dead in its tracks. It may be to serve as the apogee of violence with the aim of de-escalating the conflict. Or, in its most crass manifestation, it may be to enable an autocratic regime to “go down in a blaze of glory”, as it may suppose, and acquire some perverted sense of immortality thereby. Notice, however, that none of these cases hinges on considerations of (micro) proportionality, discrimination, or good faith. Rather, they all hinge on political and not tactical considerations, the very essence of which is *jus ad bellum*.

Competent authority. Nuclear weapon states have consistently vested the authority to employ nuclear weapons in the highest executive authority of the state (e.g., the President of the United States, the British Prime Minister, the President of France, the President of Russia, or perhaps in a very small executive body, like the Soviet Politburo).²⁴ President Truman

²¹ “NATO Nuclear Deterrence,” North Atlantic Treaty Organization Factsheet, February 2020, https://www.nato.int/nato_static_fl2014/assets/pdf/2020/2/pdf/200224-factsheet-nuclear-en.pdf, accessed 7 April 2021.

²² Ibid.

²³ Ibid.

²⁴ The argument can, of course, be made that the chief executive of a state is not necessarily authority to which the state turns for formal declarations of war. However, the nuclear employment decision is recognized as requiring a speed at which large deliberative bodies simply cannot operate. As a practical matter, therefore, it becomes an executive decision. Thus, for *jus ad bellum* purposes, the executive of the state becomes the competent nuclear war making authority.

himself first reserved to the chief executive the authority to employ nuclear weapons. In this respect, the decision to employ nuclear weapons is akin to the decision to go to war, thus making the employment decision, in effect, the decision to begin if not a new war (Case #1) then a new kind of war within a previously existing war (Case #2). This reservation of authority further reinforces the claim that the nuclear employment decision is by its nature a *jus ad bellum* act.

Public declaration. While the question of whether to publicly declare, before the fact, the decision to employ a conventional arm under *jus in bello* may arise only infrequently, the question is integral to the nuclear employment decision. That does not mean that declaration will always or ever be issued before the fact, but it does mean that the question of whether to make the declaration will always be considered. This is precisely what is meant by “nuclear declaratory policy”: “a set of public statements about the circumstances in which a state or group of states would consider using nuclear weapons.”²⁵ Generalized statements of declaratory policy exist in such places as the United States’ periodic nuclear posture reviews, presidential nuclear employment guidance, or public presidential statements.²⁶ With respect to specific instances of nuclear weapon employment, declaratory policy can be realized in the form of an ultimatum or in the form of a post-strike announcement. In any case, the idea that the necessity exists to consider such a declaration in the first instance—or for that matter, that any such declaration would be made—belongs to the *jus ad bellum* domain. True, the *jus in bello* principle of discrimination might suggest the legal or moral propriety of warning the population within a target area of a conventional attack. However, the purpose of this warning is very different than the one contemplated by the *jus ad bellum* principle of public declaration. In the former case, the aim is simply to minimize the number of casualties. In the latter case, it is either to avoid war altogether (Case #1) or to avoid its escalation to a new—or for all practical purposes, unprecedented—dimension (Case #2).²⁷

²⁵ Malcolm Chalmers, “Words That Matter? NATO Declaratory Policy and the DDR [Deterrence and Defense Posture Review],” <https://www.nti.org/analysis/articles/words-matter-nato-declaratory-policy-and-ddpr/>, originally posted November 17, 2011, accessed April 8, 2021.

²⁶ The author is indebted to an anonymous reviewer for this helpful observation.

²⁷ On this point, the wording of the leaflet dropped on Japan after the bombing of Hiroshima is instructive: “ATTENTION JAPANESE PEOPLE—EVACUATE YOUR CITIES. Because your military leaders have rejected the thirteen part surrender declaration, two momentous events have occurred in the last few days. The Soviet Union, because of this rejection on the part of the military has notified your Ambassador Sato that it has declared war on your nation. Thus, all powerful countries of the world are now at war against you. Also, because of your leaders’ refusal to accept the surrender declaration that would enable Japan to honorably end this useless war, we have employed our atomic bomb. A single one of our newly developed atomic bombs is actually the equivalent in explosive power to what 2000 of our giant B-29’s could have carried on a single mission. Radio Tokyo has told you that with the first use of this weapon of total destruction, Hiroshima was virtually destroyed. Before we use this bomb again and again to destroy every resource of the military by which they are prolonging this useless war, petition the Emperor now to end the war. Our President has outlined for you the thirteen consequences of an honorable surrender. We urge that you accept those consequences and begin the work of building a new, better, and peace loving Japan. Act at once or we shall resolutely employ this bomb and all of other superior weapons to promptly and forcefully end the war. EVACUATE YOUR CITIES.” (Translation of leaflet dropped on the Japanese, August 6, 1945, Miscellaneous Historical Documents Collection, Harry S Truman Presidential Library). While civilian evacuation is presented as the ostensible aim of the leaflets, the overarching political purpose of the

Peace as the ultimate objective of the war. This principle, when it is listed among just war criteria at all, invariably appears as a *jus ad bellum* consideration. It is a principle subject to easy perversion because, as Augustine famously observes, “when men wish a present state of peace to be disturbed, they do so not because they hate peace, but because they desire the present peace to be exchanged for one that suits their wishes. Thus their desire is not that there should not be peace but that it should be the kind of peace they wish for.”²⁸ Even so, the question “What must be done to obtain peace?” of any kind is a *jus ad bellum* question and not one that belongs solely to *jus in bello*. Neither discrimination nor proportionality nor good faith require its consideration. In fact, when the question is raised in Case #2, it is only because of a sense that the ongoing justice of the war should be reviewed.

As pertaining either to Case #1 or Case #2, the question of whether to employ nuclear weapons will likely always be accompanied, in one form or another, by the question of whether the employment decision will ultimately result in the attainment of the kind of peace desired; and that question is, by its nature, a *jus ad bellum* question.

***Jus ad bellum*—Summary.** Each of the *jus ad bellum* principles highlights important aspects of the nuclear employment question in ways simply not possible with reference to the principles of *jus in bello* alone. This in no way diminishes the significance of *jus in bello* discourse. Rather, it merely points to the inadequacy of *jus in bello* for that purpose.

***Jus post bellum* Implications.** While the present argument focuses on the *jus ad bellum* character of nuclear weapon employment decisions, it is instructive to note the *jus post bellum* implications which must be considered concomitant with that decision. Nuclear weapons are distinguished, among other ways, from all other weapons by the extraordinary nature of their immediate blast, thermal, and radiological effects. However, they are also distinguished by their residual radiological effects. These are effects which, depending upon yield and other employment parameters of the weapon, can linger in a target area for days, months, years, or decades. Moreover, radiological contamination in the atmosphere can spread the ill effects of the detonation to regions far beyond the immediate target area. In the most extreme case, the sum total of atmospheric contamination is believed by some to cause long-term, permanent, or even existential harm. The effects of ionizing radiation can also produce carcinogenic or genetic consequences that linger for generations of humans who survive the detonation.

The case can readily be made, of course, that these effects should be considered under the *jus in bello* rubric of (micro) proportionality and perhaps under discrimination as well. Nevertheless, their proper consideration cannot be responsibly ignored when framing the argument for *jus ad bellum*. Once again therefore, *ceteris paribus*, the unavoidable linkage of the nuclear employment decision to *jus ad bellum* becomes apparent.

warning and ultimatum is unmistakable. It is that overarching political purpose that demonstrates the purpose of the warning and ultimatum to be ultimately *jus ad bellum* in character.

²⁸ Augustine, *The City of God*, Book XIX:12.

CONCLUSION

The *jus ad bellum* character of nuclear weapons is particularly timely—and indeed pressing—in the milieu of 21st-century discussions about what counts as a “tactical” nuclear weapon and how such weapons might be employed in limited ways with localized effect and for ostensibly tactical purposes. This long-standing distinction between “tactical” and “strategic” nuclear weapons has some technical utility for purposes of targeting, categorizing weapons by range, treaty definitions, or even for logistic inventories. However, it also has the potentially pernicious effect of obscuring the fact, as argued above, that the decision to employ a nuclear weapon is, in reality, a *jus ad bellum* adjudication that occurs at the political level and not merely a *jus in bello* calculation at the tactical level. The “tactical”-“strategic” distinction is, in effect, one of understandable professional jargon of the kind a group of surgeons surrounding an operating table might use to quickly convey technical concepts. However, thoughtful reflection surely reveals that the distinction is utterly meaningless to those upon whom the effects of nuclear weapons are visited. More importantly, it also has no meaningful place in the larger, and far more important, discourse surrounding the true legal or moral ramifications for humankind of any thought that nuclear weapons might serve a purpose other than deterrence.

These factors combine to suggest the need for a wholesale reconsideration of what strategic nuclear communications entail. If nuclear weapons are, in fact, *jus ad bellum* weapons with enormous *jus post bellum* consequences and not merely *jus in bello* weapons—another kind of artillery, then the entire matter of strategic communications must be reconceived with nuclear weapons employment being understood as either a war-initiating act (Case #1) or a war-expanding act of such magnitude that the justice of the act itself, and not merely the question of whether it is (micro) proportional, discriminate, and within the bounds of good faith (Case #2), must be fully considered. A shift in thinking of the kind advocated here would also emphasize the need to consider, in tandem, the most consequential *jus post bellum* question imaginable, to wit: “What are the post-conflict ramifications of nuclear weapon employment?”

If one holds, as Truman apparently did in 1959, that a nuclear weapon is “[n]othing else but an artillery weapon”, then the *jus in bello* rubric might, in fact, seem adequate for the purpose of adjudicating the weapon’s employment. If, on the other extreme, one holds that employment of nuclear weapons can never be morally or legally justified, then there is nothing to adjudicate. However, the complex realities of a world informed by the existence of nuclear weapons places the issue somewhere in the middle between these two facile extremes; and it is for this reason that the present argument claims the attention of theorists and practitioners alike.

In sum, regardless of when the decision to employ a nuclear weapon is considered—before the onset of hostilities or after they have begun, that consideration will necessarily involve the tools of *jus ad bellum*. *Jus in bello* alone, as important a role as it plays in matters

of conventional applications of force, will never be sufficient to address the overarching moral and legal questions surrounding nuclear weapons. Its principles will, at best, serve as technical parameters for targeters to apply—not as grounds for the employment decision itself.

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ANALYSIS

THE LONG PATH TO THE CURRENT STATE OF SINO-AMERICAN RELATIONS

By Joseph R. DeTrani

EXECUTIVE SUMMARY

Threatened by an imposing Soviet Union, Mao Zedong reached out to President Richard Nixon for the historic 1972 meetings in Beijing which led to the normalization of relations in 1979. With normalization, China was given intelligence on Soviet movements in the East and permitted the U.S. to install equipment in Western China to monitor Soviet strategic forces while, also, assisting with efforts to defeat the Soviets in Afghanistan. Starting in 1978, when Deng Xiaoping took over as China's supreme leader, China moved quickly to a market economy, with Deng's policy of economic and political reforms. Central planning and communes were replaced by a market economy, and a political system that implemented collective leadership and term limits, with a strong Communist Party in the lead. China went from one of the poorest countries in East Asia to today's second largest economy in the world.¹

Although a visionary with his Reform and Opening initiative, Deng was not an advocate of democratization (free and fair elections), although seniors like Hu Yaobang, Zhao Ziyang and Wen Jiabao were advocates for democratization. The Shanghai Communique of 1972 was clear in stating that the United States acknowledged that there was "one China", and Taiwan was part of China, calling for a peaceful resolution of issues between China and Taiwan. The Tiananmen Square demonstrations in June 1989 and the government's brutal response suspended U.S. – China cooperation, which was quickly resumed by President George H.W. Bush. Xi Jinping replaced Hu Jintao in 2012 as the Party Secretary General and President of China. Xi immediately implemented an ambitious foreign policy, with the Belt and Road Initiative, while calling for "the great rejuvenation of the Chinese nation."² Often referring to China's century of humiliation, when a militarily weak China was exploited by the West, Japan and Russia, Xi has been able to stoke the strong sense of pride and nationalism in China, determined to make China the predominant global power by 2049, the centennial of the founding of the People's Republic of China.

At the upcoming 20th Party Congress in 2022, Xi has ensured that he can seek a third term as Party leader, with likely aspirations to rule for life. This and Xi's assertive and autocratic rule are in sharp contrast to Deng's policy of term limits, collective leadership and "hide your strength and bide your time."³ Xi's anti-corruption campaign and his "common prosperity" exhortations have wide public support in China, but his crackdown on privately

¹ News Broadcast, *BBC News*, February 14, 2011.

² Joe McDonald, "How Xijiping Plans to Rejuvenate the Great China Nation." *The Christian Science Monitor*, September 9, 2021, available at <https://www.csmonitor.com/World/Asia-South-Central/2021/0909/How-Xi-Jinping-plans-to-rejuvenate-the-great-Chinese-nation>.

³ David L Shambaugh, *China's Leaders: From Mao to Now* (Cambridge, UK: Polity, 2021).



owned enterprises and wealthy individuals has encountered real concern that Xi's policies could affect the market and China's economic prospects. Also, tension in relations with the U.S., and others on human rights, the South China Sea and Taiwan, while China aligns with a revanchist Russia that threatens Ukraine after annexing Crimea and severing Georgia, has the potential of the world viewing China as part of a Russian alliance that threatens and intimidates smaller sovereign nations.

INTRODUCTION

The November 2021 virtual summit of President Joe Biden and Chinese President Xi Jinping captured the essence of the bilateral relationship, with Biden expressing concern that relations “do not veer into conflict, whether intended or unintended” and Xi cautioning that encouraging Taiwanese independence would be “playing with fire.”⁴ How did this fifty-year relationship, that started with President Nixon's visit to China in 1972, followed by the normalization of relations in 1979 and decades of strategic cooperation, spiraling bilateral trade and investment and hundreds-of-thousands of Chinese students in U.S. universities, devolve to the current low of potential conflict? This fifty-year relationship initially focused on defeating the common enemy: the Soviet Union. When the Soviet Union imploded in 1991, the assumption, then, was that a more prosperous and developing China would move toward democratization, despite early pronouncements from Deng Xiaoping that Reform and Opening dealt mainly with economic and political reforms, with movement toward a market economy with less Central control. And the issue of Taiwan, foremost on China's agenda since the Nixon visit, was kicked down the road, despite instances when conflict over Taiwan was (and is) a real possibility. Moreover, dealing with an assertive Xi, with a China aligned with Russia, is a challenge requiring greater attention and creative statesmanship. Ironically, despite the tension in U.S. – China relations, bilateral trade and investment with China continues to rise.⁵

A COMMON ENEMY

In the Summer of 1969, the Soviet Union had 42 divisions – over one million troops – on their border with China, with indications that Moscow was considering a nuclear strike against Chinese nuclear facilities. That March, Chinese and Soviet forces clashed on Zhenbao Island on the Ussuri River, with both sides taking casualties. The conflict ended in two weeks, averting an escalation of hostilities with the potential use of nuclear weapons.⁶

⁴ Julian Borger, “Biden-Xi Summit, *The Guardian*, November 15, 2021.

⁵ Julian Borger, “Biden-Xi virtual summit: leaders warn each other over future of Taiwan,”

The Guardian, November 16, 2021, available at <https://www.theguardian.com/us-news/2021/nov/16/xi-biden-virtual-summit-us-china-conflict-taiwan-hong-kong>.

⁶ Henry Kissinger, “The Road to Reconciliation,” *On China* (London, England: Penguin Books, 2012), p. 217.

Chairman Mao Zedong had reached out to four Peoples Liberation Army (PLA) marshals – Chen Yi, Nie Rongzhen, Xu Xiangqian and Ye Jianying – and asked that they study the situation with the Soviet Union and provide him with recommendations. They proposed an active military defense and politically, an active offense. They concluded that the “last thing the U.S. imperialists were willing to see is a victory by the Soviet revisionists.”⁷

Mao decided to reach out to the United States, convinced that enlisting a far-away enemy against a nearby enemy was the best strategy for dealing with the Soviet Union. Mao, then, invited Nixon to visit China, an invitation Zhou Enlai passed to Kissinger during his secret trip to China in February 1971.

Nixon, who shared Mao’s distrust of the Soviet Union, visited China in February 1972, and based on his meetings with Mao and Zhao, agreed to a Shanghai Communique that committed the United States and China to work towards normalization of relations, acknowledging a One-China policy and expanding people-to-people contacts and trade opportunities. According to The National Security Archives electronic briefing book, “documents show that general agreement on the Taiwan problem was the sine qua non for Nixon’s trip and diplomatic normalization generally.” In Kissinger’s talk with Zhou on July 9 he said, “we are not advocating a two-China solution or a one-China one-Taiwan solution.”⁸ This met China’s demands regarding the status of Taiwan. With that understanding, the normalization process proceeded, first with a United States liaison office in Beijing in 1975, followed by normalization of relations and an embassy in 1979.

NORMALIZATION AND COOPERATION AGAINST AN AGGRESSIVE SOVIET UNION

On December 15, 1978, the White House announced plans to normalize relations with China and on January 1, 1979, formal diplomatic relations were established. Chairman Deng Xiaoping, who took over in 1978 as China’s paramount leader, after the death of Mao in 1976 and replacing Hua Guofeng as Chairman, visited the United States from January 29-31, 1979, and wowed Americans with his openness and humility. During Deng’s visit he informed President Jimmy Carter that China was going to teach Vietnam a lesson, which happened on February 18 when China’s PLA entered Vietnam. After some fierce battles, fighting ceased and Chinese forces withdrew back to China.

During this Sino-Vietnamese conflict, President Carter’s National Security Advisor, Zbigniew Brzezinski, provided China’s ambassador to the United States with updated intelligence on Soviet support to their Vietnamese allies. And it was in this context that Deng had agreed to expand cooperation with the United States in collecting and sharing intelligence on the Soviet Union. Given that the Tackman collection sites that monitored

⁷ Ibid., p. 204.

⁸ William Burr, “The Beijing-Washington Back-Channel and Henry Kissinger’s Secret Trip to China,” National Security Archive Electronic Briefing Book No. 66, February 27, 2002, available at <https://nsarchive2.gwu.edu/NSAEBB/NSAEBB66/>.

Soviet strategic capabilities in Northern Iran were no longer available to the United States after the Shah was toppled by Ayatollah Khomeini in 1979, Deng approved the installation of collection sites in Western China to monitor the Soviet Union. Indeed, this was a tense period with a Soviet Union that was on the march in Vietnam, Angola, Ethiopia, Mozambique, Yemen, Libya, Czechoslovakia, Nicaragua, Grenada and in 1979, Afghanistan. Director of Central Intelligence (DCI) Stansfield Turner visited China in July 1981 to further discuss the Soviet's December 1979 invasion of Afghanistan, at a time when Egyptian arms were getting to the Mujahedin through Pakistan and its intelligence service, the ISI. The United States was orchestrating this assistance, with a budget of \$50 million.⁹

National Security Decision Directive (NSDD) 32 of March 1982 said the United States would seek to neutralize Soviet control over Eastern Europe and authorized the use of covert action and other means to support anti-Soviet organizations in the region. NSDD-75 said the United States should not just coexist with the Soviet Union but change it fundamentally. Bill Casey replaced Turner as DCI with the election of Ronald Reagan. Casey, a veteran of the Office of Strategic Services (OSS) from World War 2 and an understudy of "Wild Bill" Donovan, who headed the OSS, was an avid anti-communist and, working with Secretary of Defense Caspar Weinberger, Reagan adviser William Clark, and others, took the lead in the implementation of these national security directives, determined to defeat the Soviet Union in Poland, Czechoslovakia, and Afghanistan. NSDD-166 in 1985 spoke of expelling Soviet forces from Afghanistan, where the Kremlin was spending between \$4-\$5 billion per year. With this new directive, efforts to support the Mujahedin increased exponentially and, working primarily with Saudi Arabia, Pakistan and China, the Soviets were now spending more money in Afghanistan and taking significant casualties, affecting the morale of Soviet troops in Afghanistan and families in the Soviet Union. The approval to provide Stinger missiles to the Mujahedin was the decisive upgrade in weaponry that eventually convinced Moscow that victory was not possible, and withdrawal was its only viable option.¹⁰

In November 1986, Soviet leader Mikhail Gorbachev made the decision to withdraw all Soviet combat troops by the end of 1988. He said Afghanistan had become "a bleeding wound."¹¹ The Soviets eventually withdrew all soldiers in February 1989 and the last Soviet aircraft left Bagram Airfield on February 3, in line with the Geneva Accords of April 1988 between Afghanistan and Pakistan, with the Soviet Union and the United States as guarantors.

President George H.W. Bush replaced Reagan in January 1989 and initially ordered a strategic policy review of relations with the Soviet Union and met with Gorbachev in Malta in December 1989. Discussions dealt with the Strategic Arms Reduction Talks (START) and developments in Eastern Europe, with Bush encouraging Gorbachev to move forward with

⁹ Robert Michael Gates, "1979 Cold War, Hot War-East War, West War," *From The Shadows: The Ultimate Insider's Story of Five Presidents and How They Won the Cold War* (New York, NY: Simon & Schuster Paperbacks, 2006), pp. 122-123.

¹⁰ Peter Schweizer, *Victory: The Reagan Administration's Secret Strategy That Hastened the Collapse of the Soviet Union* (New York, NY: Atlantic Monthly Press, 1994).

¹¹ "Afghanistan and the Soviet Withdrawal 1989 – 20 Years Later." *The New York Times*, February 15, 2009.

democratic reforms. The following two years proved disastrous for Gorbachev, with a failed coup in August 1991 and his resignation as head of the Communist Party shortly thereafter. Ukraine and Belarus declared independence and the Baltic states sought international recognition as sovereign states. On December 25, 1991, Gorbachev resigned as president of the Soviet Union, with Boris Yeltsin president of a Russian state that was no longer a communist monolith.

The Soviet Union, the common enemy of the United States and China, was defeated.

DENG XIAOPING'S REFORM AND OPENING

When Deng took over in December 1978 at the Third Plenum of the Eleventh Party Congress, he inherited a poor and ravaged country. The toll from Mao's disastrous Great Leap Forward, which killed millions due primarily to starvation and the riotous Cultural Revolution, from 1966-76, was unimaginable. Deng, purged twice by Mao and the radical Gang of Four, headed by Mao's wife, Jiang Qing, was now in charge. His vision of market-oriented reforms and opening to the outside world for investment, technology and trade met with opposition from some in leadership positions, but Deng persisted. His immediate decisions dealing with decollectivization of agriculture, land reform and free markets were well-received by the public, as was his decision to encourage foreign investment in China, while encouraging Chinese students to study in the United States.

Deng implemented an ambitious political reform program that called for collective leadership and term limits, with a strong Communist Party in the lead. Deng reached out to Party elder Chen Yun to work with him, literally as his deputy, and to Zhao Ziyang – the first Party secretary to Sichuan Province whose rural reform policies became the model in Deng's efforts to dismantle Mao's people's communes to help implement his economic vision for China. Deng often referred to the four little dragons – Hong Kong, Singapore, South Korea and Taiwan – as economic models for a poor China. At a Politburo meeting in March 1979, Chen was also blunt in his assessment: "We have 900 million people and over 80 percent are farmers. We are very poor."¹²

Chen working with Deng established Special Economic Zones, later called Economic and Technological Development Zones, encouraging high-tech foreign firms to invest in these zones. In 1979, American Motors entered discussions with China to build Jeeps in China, with the Jeep Cherokee XJ coming off the production line in 1985. Guangdong Province, the historic Southern gate into China, also took the lead, encouraging foreign investment, issuing bonds, introducing privately owned taxis and letting the market take the lead for planning purposes. The Los Angeles Olympics was a model that encouraged Guangdong to build a

¹² Ezra F. Vogel and Deng Xiaoping, *Deng Xiaoping and the Transformation of China* (Cambridge, MA: Belknap Press of Harvard University Press, 2013), p. 429.

state-of-the-art stadium for the Asian games in 1990, which probably helped with the selection of Beijing for the Olympics in 2008.¹³

Although the 13th Party Congress in 1987 endorsed and committed to pushing forward with Deng's reforms, there continued to be some leadership opposition to the speed of Deng's economic reforms and opening to the outside. Chen Yun, although highly respected by Deng, was more cautious and advocated for more of a central government role, rather than relying solely on the market, for economic planning purposes. Elders like Li Xiannian supported Chen, but Deng prevailed.

DEMOCRATIZATION

According to Zhao Ziyang, the Party Secretary General installed by and then replaced by Deng during the Tiananmen demonstrations in June 1989, Deng was a strong advocate for one-party rule. He was opposed to a multi-party system and believed power should be in the hands of one or a few, not a western tripartite separation of powers. Indeed, stability trumped everything else and to maintain stability, a dictatorship was the ultimate weapon. Thus, Deng's reform and opening had nothing to do with democratization. It dealt exclusively with growing the economy and opening to the outside world for economic development purposes, as China moved toward a market economy. The reforms Deng advocated were administrative reforms, dealing with regulations, organizations and methodology and its effect on the general morale.

Zhao said he was an advocate for a parliamentary democracy, with the rule of law, not the rule by men. This was not the view of Deng. Zhao had replaced Hu Yaobang as the Party secretary general in 1987 when Deng removed Hu, accusing Hu of indulging in bourgeois liberalization and advocating democracy. Zhao was replaced by Deng during the Tiananmen demonstration in June 1989, accused of supporting the student demonstrators and splitting the party. He was under house arrest until his death in January 2005.¹⁴

Despite Deng's great success with economic reform and opening, he did not advocate for democratization. His removal of Party Secretary Generals Hu Yaobang and Zhao Ziyang was further proof that Deng's focus was on establishing a dynamic market economy, with a politically efficient government that had a policy of collective leadership and term limits. Premiers Wen Jiabao and Zhu Rongji, like Hu and Zhao before them, were advocates for democratization, with free and fair elections, which China initially pursued with village elections.

¹³ Ezra F. Vogel, "Experiments in Guandong and Fujian," *Deng Xiaoping and the Transformation of China*, Chapter 15, op. cit.

¹⁴ Zhao Ziyang and Roderick MacFarquhar. "Deng's View of Political Reform," *Prisoner of the State: The Secret Journal of Zhao Ziyang* (London: Pocket Books, 2010), pp. 247–53.

TAIWAN

In October 1971, Henry Kissinger met with Premier Zhou Enlai to prepare for Nixon's visit to China. Zhou's first request was that the Taiwan issue had to be discussed and resolved first. Zhou said the United States needed to "recognize the PRC as the sole legitimate government of China and not make any exceptions – and accept that Taiwan was an inalienable part of China."¹⁵ Continuing, Zhou said the United States had to withdraw all its armed forces and dismantle all its military installations in Taiwan and in the Taiwan Straits within a limited time. Eventually, the U.S.-Republic of China Mutual Defense Treaty would cease to exist. According to Kissinger, Zhou's comments were familiar, having heard it during 136 Warsaw meetings of the ambassadors from the United States and China. Moreover, at the time of his secret trip to China, there were no differences on the issue of "one China" between China and Taiwan, given that Kuomintang General Chiang Kai-shek was president of Taiwan.¹⁶

During the Nixon visit to China, from February 21-28, 1972, Kissinger spent considerable time working on a joint communique acceptable to both Nixon and Mao. It took two days of work with Foreign Minister Qiao Guanhua to craft an acceptable final section to the Shanghai Communique that read:

The U.S. side declared: The United States acknowledges that all Chinese on either side of the Taiwan Strait maintain there is but one China and that Taiwan is a part of China. The United States Government does not challenge that position. It reaffirms its interest in a peaceful settlement of the Taiwan question by the Chinese themselves. With this prospect in mind, it affirms the ultimate objective of the withdrawal of all U.S. forces and military installations from Taiwan. In the meantime, it will progressively reduce its forces and military installations on Taiwan as the tension in the area diminishes.¹⁷

The joint (U.S.-China) Shanghai Communique continues to be the principal document dealing with the issue of Taiwan. The second joint communique dealt with the establishment of Diplomatic Relations on January 1, 1979. The third communique, on August 17, 1982, dealt with arms sales to Taiwan and states, inter alia,

The United States Government states that it does not seek to carry out a long-term policy of arms sales to Taiwan, that its arms sales to Taiwan will not exceed, either in qualitative or in quantitative terms, the level of those supplied in recent years since the establishment of diplomatic relations between the United States and China, and that it intends to reduce gradually its sales of arms to Taiwan, leading over a period of time to a final resolution. In so stating, the United States

¹⁵ Burr, op. cit.

¹⁶ Henry Kissinger, "Triangular Diplomacy and the Korean War," *On China*, op. cit., pp. 113-149.

¹⁷ Henry Kissinger, "Touching the Tiger's Buttocks," *On China*, op. cit.

acknowledges China's consistent position regarding the thorough settlement of this issue.¹⁸

President Ronald Reagan, a friend of Taiwan from his days as governor of California, was concerned with the third communique and the message it conveyed to Taiwan. To reassure Taiwan and the United States Congress that despite normal relations with China, the United States was not abandoning Taiwan, the president's staff at the White House, in coordination with Taiwan, secretly negotiated the so-called Six Assurances to restrict implementation of the third communique on arms sales. The assurances were reinforced by a memorandum placed in the files of the National Security Council that tied observance of the third communique to the peaceful solution of differences between China and Taiwan. The six assurances are: affirmation that the United States had not set a specific date to end arms sales to Taiwan; had not committed to consulting with Beijing on such sales; had not committed to amending the Taiwan Relations Act; had not altered its position regarding Taiwan's political status and would neither pressure Taipei to negotiate with Beijing nor serve as a mediator.

The U.S. Congress conveyed a similar message to Taiwan and China with the Taiwan Relations Act (TRA) of 1979, a law passed by Congress after the United States formally established relations with China on January 1, 1979. These are a few sentences in the TRA that captured Congress's concern:

...to make clear that the United States decision to establish diplomatic relations with the People's Republic of China rests upon the expectation that the future of Taiwan will be determined by peaceful means; to consider any effort to determine the future of Taiwan by other than peaceful means, including by boycotts or embargoes, a threat to the peace and security of the Western Pacific area and of grave concern to the United States; to maintain the capacity of the United States to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people of Taiwan.¹⁹

Taiwan president Chiang Ching-Kuo died in 1988, succeeded by his vice president, native-born Lee Teng-hui. Lee was the first president of Taiwan to visit Southeast Asia in 1989 and met with Singapore Prime Minister Lee Kuan Yew. Singapore facilitated communication between China and Taiwan, thus, making Singapore the first stop in his travels was appropriate. Prime Minister Lee was impressed with Lee's geopolitical knowledge but concerned with his disdain for China's leaders and his disregard for Chinese history and culture. Singapore hosted the 1993 talks between China and Taiwan, with Koo Chen-fu representing Taiwan and Wang Daohan representing China. The talks were

¹⁸ Kissinger, *op. cit.*, p. 383.

¹⁹ "Taiwan Relations Act," Public Law 96-8, 22 USC 3301 (1979).

unproductive, with China wanting to talk about reunification and Taiwan talking only about administrative issues, refusing to talk about reunification.²⁰

Singapore Prime Minister Lee, who met often with senior Chinese leaders, wrote in his memoirs published in 2000 that no Chinese leader can survive if he is seen to “have lost Taiwan.” He goes on to say “that the U.S. may be able to stop China from any force for another 20 to 30 years. With that time, China is likely to develop the military capability to control the Straits. It may be wiser, before the military balance shifts to the mainland, to negotiate the terms for an eventual, not an immediate, reunification.”²¹

In January 1995, President Jiang Zemin personally proposed to negotiate all issues with Taiwan on an equal basis, on the premise that there is one China and Taiwan is part of China. Jiang was hoping for movement toward reunification with Taiwan, which with reversion of Hong Kong and Macao to China, in 1997 and 1999, would have been historical accomplishments during his tenure. The visit of Taiwan President Lee Teng-hui to the United States in 1995 to make a speech at his alma mater at Cornell University shelved this Jiang initiative. China was irate that the United States issued a visa to Lee, having received reassurances from Secretary of State Warren Christopher that the Clinton Administration was opposed to issuing a visa to Lee. The U.S. Congress voted on this issue and demanded that the Clinton Administration issue the visa. Lee’s speech at Cornell angered Beijing, given that he spoke of Taiwan as a democratic sovereign nation and for the first time said it was the Republic of China on Taiwan.²²

In 1996, the United States deployed two aircraft carrier battle groups to the vicinity of the Taiwan Strait in response to Chinese military exercises in March, which included firing missiles into waters 20 miles from Taiwan’s coast and on March 13 conducting another missile test and a joint ground, air and naval exercise. China’s attempts to intimidate Taiwan, as they prepared for the first direct presidential election on March 23, failed. Lee Teng-hui was elected, becoming Taiwan’s first popularly elected president.

Tension with China over U.S. relations with Taiwan have intensified over the years. The subject of weapons sales to Taiwan is a recurring issue with China. The administrations of Carter, Reagan, George H. W. Bush, Clinton, George W. Bush, Obama and Trump all have been accused by China of violating the third joint communique of 1982. China complained about the 150 F-16s sold during the George H.W. Bush Administration, the eight diesel-electric submarines in the George W. Bush administration, the retrofitting of 145 F-16 A/B aircraft in the Obama Administration and a myriad of other arms provided to Taiwan since 1979.

China’s recent provocative actions against Taiwan have escalated, with hundreds of Chinese war planes entering Taiwan’s air defense zone. Taiwan’s president Tsai Ing-wen has protested and said Taiwan would “do whatever it takes to defend itself.” In a recent essay in *Foreign Affairs* magazine, Tsai warned that there would be catastrophic consequences for

²⁰ Lee Kuan Yew, “Deng Xiaoping’s China,” *From Third World to First: The Singapore Story, 1965-2000: Memoirs of Lee Kuan Yew* (Singapore: Marshall Cavendish Editions, 2015).

²¹ *Ibid.*, p.633.

²² Susan L. Shirk, “Taiwan,” *China: Fragile Superpower* (Oxford: Oxford University Press, 2007), pp. 181–211.

peace and democracy in Asia if Taiwan were to fall to China: “It would signal that in today’s global contest of values, authoritarianism has the upper hand over democracy.”²³

Taiwan is a flashpoint for potential military conflict with China. We saw this in 1996 and we are seeing it now. Taiwan is no longer an issue we can “kick down the road.”

CHINA’S ECONOMIC RISE

In 1978, when Deng took over as China’s supreme leader, he inherited a poor and struggling China. The toll from the disastrous Great Leap Forward and Cultural Revolution was profound. Deng’s initial and primary focus was economic reform and opening. Working with Chen Yun, Hu Yaobang, Zhao Ziyang, and others, he was able to move China in a different direction, toward a market economy that focused on technology, innovation and meritocracy, and a system that sought foreign direct investment and interaction primarily with U.S. companies and universities. Thousands of Chinese students were sent to colleges and universities in the United States, with the goal that a good percentage would return to China to help build a strong and self-reliant economy.

From a poor and struggling China emerged a China with a Gross Domestic Product (GDP) of \$15.6 trillion in 2020, only second to the United States. The World Bank adjusted its forecast for China’s economic growth in 2021 from 8.5 to 8% and for 2022 from 5.4 to 5.1%. Trade in goods and services with the United States was \$615.2 billion in 2020, with the United States importing from China \$450.4 billion.²⁴ In 2020, U.S. Foreign Direct Investment in China was \$123.9 billion, a 9.4% increase from 2019.²⁵

In 1979, American Motors entered discussions with China about a partnership to manufacture Jeeps in China. There are now approximately 338 U.S. companies in China, with a 59% increase in U.S. investment in China in 2021.²⁶

In February 2021, Xi Jinping said China had eradicated extreme poverty and that over the past eight years, nearly 100 million people have been lifted out of poverty. There is now a growing middle class in China, although demographic issues persist, mainly due to China’s past “one child” policy.

In 2020/2021, there were 317,000 Chinese students studying at U.S. colleges and universities. A high percentage of these students were studying mathematics and computer science. This is a decrease from 372,532 Chinese students in 2019/2020. The decrease

²³ Tsai Ing-wen, “Taiwan and the Fight for Democracy,” *Foreign Affairs*, November/December 2021, available at <https://www.foreignaffairs.com/articles/taiwan/2021-10-05/taiwan-and-fight-democracy>.

²⁴ Broadcast, *National Public Radio*, September 23, 2021.

²⁵ Emily Feng, “U.S. Businesses in China Confident despite Pandemic and Stagnant Bilateral Relations,” *National Public Radio*, September 23, 2021.

²⁶ Broadcast, *National Public Radio*, September 23, 2021.

apparently was due to the coronavirus and schools going virtual. It's also possible that the decrease was due to tension in the U. S.- China bilateral relationship.²⁷

Despite the political tension in our relationship with China, U.S. investment in China continues to increase. And despite the concern with intellectual property theft by China, U.S. companies remain in China, continuing to get a return on their investment and, for many companies, viewing intellectual property theft as the cost of doing business. The U.S. trade deficit with China, approximately \$285.5 billion,²⁸ continues to be actively negotiated, to get China to import more goods and services from the United States.

TIANANMEN, BELGRADE EMBASSY BOMBING AND THE EP-3 INCIDENT

In mid-April 1989, former Party Secretary General Hu Yaobang died and on the day of his funeral, April 22, students and others gathered at Tiananmen Square demanding political and economic reforms. The numbers in the square increased to thousands and at the end of May martial law was declared. The PLA, with the Western media filming developments due to their presence in Beijing to cover the visit of Soviet leader Gorbachev, started to move toward the Square. On June 4th, the PLA moved into Tiananmen, reportedly killing hundreds who obstructed their movement – all captured on video by the foreign press. Once at the Square, the remaining students and others disbanded.²⁹

The United States and others criticized China for the killings, with President George H.W. Bush imposing sanctions, banning arms sales, halting all technical transfers to China, and suspending high-level exchanges. The following month, the media reported that National Security Adviser Brent Scowcroft secretly visited China to “get the relationship back on track.”³⁰ In his meeting with Deng Xiaoping, Deng was unapologetic and defiant to the point of criticizing the United States for fomenting the demonstrations. A subsequent visit in December to Beijing by Scowcroft captured Scowcroft toasting his Chinese host at a banquet, which angered the American people. Bush was criticized for being soft on China.

On May 7, 1999, during NATO military action against Yugoslavia, a U.S. B-2 stealth warplane inadvertently bombed the Chinese Embassy in Belgrade, killing three Chinese officials. The mission's intent was to bomb the Yugoslav Federal Directorate for Supply and Procurement, an adjacent building. The coordinates were wrong, and President Clinton immediately apologized, saying it was an unfortunate accident. There were massive anti-U.S. demonstrations in Beijing and other cities, with significant damage done to the U.S. embassy in Beijing and its consulates in Shanghai and Chengdu. The United States provided

²⁷ C. Textor, “China- Statistics & Facts,” April 28, 2020, available at <https://www.statista.com/topics/753/china/#:~:text=China%20is%20the%20world's%20second,United%20States%20in%20that%20year>.

²⁸ Broadcast, *National Public Radio*, September 23, 2021.

²⁹ Henry Kissinger, “Reagan and the Advent of Normalcy,” *On China*, op. cit.

³⁰ Christopher Preble, “When Brent Scowcroft Saved the US-China Relationship,” *The Hill*, August 24, 2020, available at <https://thehill.com/opinion/international/513333-when-brent-scowcroft-saved-the-us-china-relationship>.

compensation to China for its losses, but the Chinese government never publicly agreed with the U.S. contention that this was a mistake and not deliberate. Reportedly, most of the people in China still believe the bombing was deliberate.³¹

On April 1, 2001, a Navy EP-3 signals intelligence aircraft and a Chinese J-8 interceptor fighter jet collided in international airspace over the South China Sea, killing the Chinese pilot and crippling the U.S. Navy plane, which was forced to make an emergency landing at a Chinese airfield on Hainan Island. The 24-person crew was detained and interrogated for eleven days and then returned to the United States. The plane was carefully inspected by the Chinese and returned in July, after the United States arranged for Lockheed Martin technicians to dismantle and return it in pieces. What was also especially concerning was the inability of President George W. Bush to reach President Jiang Zemin immediately after the incident to discuss the accident and secure the return of the crew and plane.³²

These are just a few of the incidents that involved issues between the United States and China. In each instance, leadership communications were less than perfect, often with China either accusing the United States of instigating demonstrators at Tiananmen, or deliberately not informing the Chinese public that the bombing of their embassy in Belgrade was an accident or the humiliation of a U.S. president unable to reach his counterpart in China to discuss the EP-3 incident and arrange for the return of the U.S. crew. The U.S. embassy in Beijing is well-staffed with competent officers, as are our consulates in China. The same is true for China, with its embassy in Washington and consulates throughout the United States. Thus, there should be good communications between our countries. The problem, however, is at the leadership level in Beijing, when for political reasons information to the Chinese people is denied or distorted.

XI JINPING

Deng Xiaoping, and his successors Jiang Zemin and Hu Jintao, believed that it would be wise for China to “hide its strength and bide its time” when China was a rising power, solicitous of foreign direct loans and technology and concerned that countries might be fearful of a strong China. In 2013, after succeeding Hu Jintao in 2012, President Xi announced his ambitious foreign policy initiative: One Belt One Road initiative (OBOR), also known as the Belt and Road Initiative (BRI), connecting Asia with Africa and Europe via land and navigation routes – a contemporary Silk Road. The BRI touches over seventy countries and international organizations and commits China to investing billions in loans to many of these countries, mainly for infrastructure projects. According to the 2021 China-Africa Economic and Trade Relationship Annual Report over the last twelve years China established 25 economic and

³¹ Daniel Williams, “Missiles Hit Chinese Embassy,” *The Washington Post*, May 8, 1999, available at <https://www.washingtonpost.com/wp-srv/inatl/longterm/balkans/stories/belgrade050899.htm>.

³² Elisabeth Rosenthal and David Sanger, “U.S. Plane in China after It Collides with Chinese Jet,” *The New York Times*, April 2, 2001, available at <https://www.nytimes.com/2001/04/02/world/us-plane-in-china-after-it-collides-with-chinese-jet.html>.

trade cooperation zones in sixteen African countries.³³ In comparison, A *Statistica* Research Department report stated that U.S. Foreign Direct Investment in Africa decreased from more than \$60 billion in 2014 to \$47.5 billion in 2020.³⁴

Xi's vision of "making China great again" and calling for "the great rejuvenation of the Chinese nation" focuses heavily on geoeconomics, using China's economic tools, backed by a strong military, to accomplish its regional and global political objectives. This is a strategy to reclaim China's past greatness, as the "Middle Kingdom," with 5,000 years of history and culture, when China was the dominant power. China's membership in the Shanghai Cooperation Organization, an alliance that deals with economic, political and security issues and its application to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership are pieces to Xi's goal of establishing alliances and relationships that will permit China to become the predominant power in the region and eventually in the world.³⁵

Xi often reminds the Chinese people – and the world – of the Century of Humiliation, from 1839-1949 when China was exploited by the West, Japan and Russia. Chinese students study this period of humiliation when portions of China were seized by foreign powers primarily because of China's technological and military weaknesses. Xi has made it clear to the Chinese people that this will never happen again; that Beijing will ensure that China's territorial integrity, especially its border provinces and adjacent seas, is secure with advanced technology and military capabilities; that the Chinese Communist Party is at the vanguard and will ensure that the "China Dream" – to be rich, powerful and respected – is accomplished; that China will never again be humiliated; and that China will never forget the national humiliation – (*Wu Wang Guo Chi*).

Xi delivered a fiery speech at the centennial of the founding of the Chinese Communist Party on July 1, 2021: "The Chinese people will never allow foreign forces to bully, oppress or enslave us. Whoever nurses delusions of doing will crack their heads and spill blood on the Great Wall of steel built from the flesh and blood of 1.4 billion Chinese people."³⁶

According to Xi, on the 100th anniversary of the founding of the People's Republic of China on October 1, 2049, China will be a fully developed, rich and powerful nation. This and other pronouncements from Xi have been embraced by the Chinese people. Nationalism is strong in China. This was evident in May 1999 when tens of thousands of students, workers, academics, and government officials aggressively protested the United States attacking the

³³ Chinese Academy of International Trade and Economic Cooperation (CAITEC) and China-Africa Economic and Trade Promotion Council, *China-Africa Economic and Trade Relationship Annual Report 2021*, available at <https://res.caidev.org.cn/rc-upload-1636704478930-33-1636706776439.pdf>.

³⁴ "Direct investment position of the U.S. in Africa 2000-2020," Statistica Research Department, August 4, 2021, available at <https://www.statista.com/statistics/188594/united-states-direct-investments-in-africa-since-2000/>.

³⁵ Graham Allison, "What Xi Jinping Wants," *The Atlantic*, May 31, 2017, available at <https://www.theatlantic.com/international/archive/2017/05/what-china-wants/528561/>.

³⁶ Chris Buckley and Keith Bradsher, "Marking Party's Centennial, Xi Warns That China Will Not Be Bullied," *The New York Times*, July 1, 2021, available at <https://www.nytimes.com/2021/07/01/world/asia/xi-china-communist-party-anniversary.html>.

U.S. embassy and consulates for the bombing of the Chinese embassy in Belgrade. Today, nationalism permeates the country and fuels Xi's ambitious foreign policy agenda.

ISSUES AND CHALLENGES FOR A CHINA RULED BY XI JINPING

At the 20th Party Congress in late 2022, Xi Jinping has ensured that he can seek a third five-year term as Party General Secretary. It is fair to assume that Xi aspires to be China's President for life, in sharp contrast to Deng Xiaoping's policy of term limits and cautioning against the cult of personality that was emblematic of Mao Zedong's reign and the havoc caused by the Cultural Revolution from 1966-1976.

At China's 13th National People's Congress, in March 2018, presidential term limits were abolished, and a powerful new government agency was incorporated into China's constitution: the National Supervisory Commission, headed by Yang Xiaodu, an aide to Xi. This is a notable expansion of Xi's anti-corruption campaign, which started in 2013 and was responsible for the removal and imprisonment of hundreds of thousands of former mid-level and senior officials: army generals, members of the Central Committee, to include Bo Xilai, a powerful and charismatic party chief who once was considered a rival to Xi for leadership of the Party; and Zhou Yongkang, who, as secretary of the Central and Legal Affairs Commission, oversaw the security services and law enforcement while also a member of the Politburo Standing Committee, China's highest decision-making body. Corruption in China has always been a problem; thus, the public has been supportive of this anti-corruption campaign. The issue, however, is using the campaign for political purposes, to ensure total loyalty to Xi.³⁷

China's economic rise has been impressive, with projections that by 2030 China's GDP will surpass the United States. Currently, there are concerns that China's economy will not grow at this rate. The Chinese Academy of Social Sciences expects annual growth to slow to 5.3% in 2022 from 8% in 2021. Recent defaults in China's property sector are concerning. Recent media coverage of the government's actions against China's most productive and lucrative private-sector individuals and companies have unnerved many in the private sector, concerned with Xi's views on permitting China's market economy to continue to function unimpeded by a planned economic system, controlled by the Party.³⁸

A recent *People's Daily* article by Qu Qing-shan, a member of the Central Committee, was surprising in its praise of Deng Xiaoping's "reform and opening" and his criticism of Mao's Cultural Revolution, which appeared to be a rebuke of Xi, who wasn't mentioned in the article. Deng was praised in another article published by *Liberation Daily*, a major paper, by a leading member of the Party School in Shanghai, Hu Wei, who said Deng correctly "left

³⁷ Jamie P. Horsley, "What Is so Controversial about China's New Anti-Corruption Body," *The Diplomat*, May 30, 2018, available at <https://thediplomat.com/2018/05/whats-so-controversial-about-chinas-new-anti-corruption-body/>.

³⁸ "Chinese govt thinktank proposes growth target of above 5% for 2022," *Reuters*, December 6, 2021, available at <https://www.reuters.com/markets/asia/chinas-economy-expected-grow-53-2022-says-govt-think-tank-2021-12-06/>.

socialism” and the “planned economic system” and replaced it with a market system.³⁹ Articles of this type, praising Deng and subtly rebuking Xi may be indicative of the concern of some in the Party that Xi’s autocratic control of the Party and country could impede China’s economic growth.⁴⁰

China’s alliance with Russia is a marriage of convenience since there is considerable historical distrust between Beijing and Moscow. But for economic and geopolitical reasons this relationship has developed into a powerful alliance. In 2021, China’s purchase of Russian pipeline gas (a \$400 billion deal signed in 2014 to build the Power of Siberia 1 pipeline which went operational in 2019) was 6.6 million tons, an increase of 2.95 million tons. Projections are that China will be importing more gas from Russia, using this pipeline and a second pipeline (the Power of Siberia 2 going through Mongolia) that could be signed during the February 2022 Winter Olympics in Beijing.⁴¹ For China, having access to this gas ensures that if gas imports using maritime routes through the Strait of Malacca are cut off with a naval blockade, China would have this pipeline-delivered gas as an integral part of its energy security policy. For Russia, it ensures a market in China, for needed revenue but also if the Nord Stream 2 pipeline to Germany, completed and ready to go operational, is halted due to developments with Ukraine or other geopolitical issues that may result in sanctions imposed on Russia. Of course, for China, in addition to having access to needed gas from Russia, acquiring Russian sophisticated military technology – Su-35 combat aircraft, S-400 air defense systems, submarine technology, etc. – is an inducement for staying aligned with Russia.⁴²

In January 2022, China, Russia, and Iran held their third joint naval exercise together in the Indian Ocean and in October 2021, China and Russia held their first naval exercise in the Western Pacific, with a flotilla of 10 warships circling around Japan’s main island. These naval exercises further developed the China-Russia comprehensive strategic partnership of coordination for the new era, according to Rear Admiral Bai Yaoping of the People’s Liberation Army’s Northern Theater Command.⁴³

Geopolitically, how can Xi and the leadership in the Party explain to the 1.4 billion people that China is now aligned with a revanchist Russia that is threatening Ukraine, severed part of Georgia, supported Syrian President Bashar al-Assad with the brutal suppression of the Jasmine Revolution while securing a naval base in Syria, annexed Crimea and sent troops to Africa and Libya while supporting Armenia against Azerbaijan and recently sent troops to

³⁹ Kevin Rudd, “China’s Economic Downturn Gives Rise to a Winter of Discontent,” *The Wall Street Journal*, January 21, 2022, available at <https://www.wsj.com/articles/chinas-economic-woes-give-rise-to-a-winter-of-discontent-president-xi-jinping-cewc-common-prosperity-11642777025>.

⁴⁰ Ibid.

⁴¹ “China’s Import of Russian Pipeline Gas over 6.6 Mln Tonnes in 11m 2021 — Customs,” TASS, December 20, 2021, available at <https://tass.com/economy/1378225>.

⁴² “See, for example, “China’s friendly ties with Russia will never weaken, top diplomat says,” TASS, December 20, 2021, available at <https://tass.com/world/1377843>.

⁴³ Huang Panyue, “Highlights of the China-Russia Joint Sea Military Exercise and Joint Cruise,” *China Military Online*, October 26, 2021, available at http://eng.chinamil.com.cn/view/2021-10/26/content_10102646.htm.

Kazakhstan to literally control the country? Is aligning with a revanchist Russia the image Xi wants to project to his people and to those countries involved with China's Belt and Road Initiative, or with the Asia Infrastructure Investment Bank or the Philippines and others contesting China's claims in the South China Sea, despite a ruling from a United Nations Tribunal disputing China's claim of sovereignty over the islands and reefs?

Mao Zedong said, "political power grows out of the barrel of a gun," published in the "Little Red Book" during the Cultural Revolution from 1966-1976. It appears that Vladimir Putin agrees with Mao and is using Russia's military might to threaten and intimidate others. Is this the image that Xi Jinping and the Party wants to project to the region and the world? Is this what "wolf warrior diplomacy" was meant to convey to other countries?⁴⁴

DEALING WITH AN ASSERTIVE CHINA

The Chinese Communist Party (CCP) is determined and confident that they will be the dominant power in East Asia and, eventually, the world. The speed of its economic development and military modernization has instilled a sense in China, especially in the Party, that China is destined to overtake the United States as the predominant global power.

Strategic competition and strategic cooperation are not exclusive of each other. Competing with China to ensure that the United States continues to create and develop new and innovative technologies and to ensure the resilience of the supply chain is today's reality. Conversely, U.S. – China cooperation on issues that affect the national security of all countries is the responsibility of two great powers. Thus, joint efforts on pandemics, climate change, nuclear proliferation and international organized crime are just some of the issues that should engender close and meaningful cooperation.

The view that China would become more democratic as the economy improved was always problematic. Deng Xiaoping believed in a strong leader and a strong Communist Party, not democratic pluralism. Other Chinese leaders, however, advocated for democratization, with free and open elections and the rule of law. It is possible that those voices in China advocating for a less autocratic leadership eventually will prevail.

The United States must do a better job of informing the world about its values, about liberal democracies and the rule of law, and the inalienable rights of all people. For the past 30 years, since the implosion of the Soviet Union in 1991, the United States has done a poor job of educating the world about its form of governance. We closed the United States Information Service in 1996 and closed many of the cultural centers around the world, which in hindsight was a mistake. It is important that all nations know the difference between a liberal democracy and an autocracy. Indeed, that's part of today's strategic competition with China.

⁴⁴ Mao Zedong, "Out of the Barrel of a Gun," *Lapham's Quarterly*, available at <https://www.laphamsquarterly.org/revolutions/out-barrel-gun>.

In that context, the United States should continue to welcome the hundreds of thousands of Chinese students who study in U.S. colleges and universities each year. Seeing and experiencing democracy in action, and all its challenges, is part of their education. Many bring back those experiences to China, where there continues to be much goodwill toward the United States, despite the propaganda by the Party portraying the United States as the enemy that now feels threatened by a rising China.

Pursuant to the Shanghai Communique of 1972 that acknowledged that both China and Taiwan agree that there is one China and Taiwan is part of China, a peaceful resolution of differences is the ultimate objective. And as stated in the Taiwan Relations Act of 1979, the future of Taiwan should be resolved by peaceful means and any other than peaceful means will be of grave concern to the United States. China's recent efforts to intimidate Taiwan with Chinese warplanes intruding into Taiwan's air defense zone were reckless and dangerous. China must understand that such behavior has consequences.

Standing firm against Russia will help China – and others – better understand that the United States cares about its allies and partners and will respond to Russia's or any other country's aggression.

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ANALYSIS

MISSILE DEFENSE IN A MULTIPOLAR WORLD*

By

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INTRODUCTION/BACKGROUND

The recent Department of Defense (DoD) announcement surrounding the soon to be published National Defense Strategy and efforts to initiate the Missile Defense Review in close coordination ensuring an integrated approach is a tremendous step towards a collective and synchronized approach (a Nuclear Posture Review is also underway as is a wider National Security Strategy review). This is reflected in the concept of Integrated Deterrence that the DoD is promulgating, an approach which “is multi-domain, spans numerous geographic areas of responsibility, is united with allies and partners, and is fortified by all instruments of national power.”¹ However, the implementation and implications of Integrated Deterrence have yet to be articulated, with Harlan Ullman suggesting that it “appears integrated deterrence so far is a slogan.”² These efforts are critical to establishing a baseline of strategic guidance across the DoD, and necessary to address the global threats to the United States and its geopolitical interests.

Continued modernization, research, development, and testing by the People’s Republic of China (PRC) and Russia clearly present significant challenges to the United States and must be addressed using the aforementioned defense documents, coupled with an increased DoD budget, a more expeditious acquisition process, and recognition that both countries are influencing global politics in a push for a change from a unipolar to a multipolar world. Although, as Øystein Tunsjø explains, the distribution of capabilities, in particular, the huge disparity between Chinese and Russian national power, indicates that a new U.S.-China bipolar system is emerging, rather than a multipolar system.³ Jacques Delisle and Avery Goldstein explain in this regard: “China’s rapid rise, and the absence of any other state following a similar trajectory, brought a transition from the post-Cold War condition of

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¹ Terri Moon Cronk, “DOD Official Says Integrated Deterrence is Call to Action,” U.S. DoD, 28 September 2021, available at <https://www.defense.gov/News/News-Stories/Article/Article/2791589/dod-official-says-concept-of-integrated-deterrence-is-call-to-action/source/GovDelivery/>.

² Harlan Ullman, “‘Integrated Deterrence’ Must be a Strategy, Not a Slogan,” *UPI*, 20 October 2021, available at <https://www.upi.com/Voices/2021/10/20/Harlan-Ullman-integrated-deterrence-defense-lloyd-austin/3151634653636/>.

³ Øystein Tunsjø, *The Return of Bipolarity in World Politics: China, the United States, and Geostructural Realism* (New York: Columbia University Press, 2018), pp. 77-78 and pp. 180-181.



unipolarity, marked by the United States' position as a peerless superpower, to what seems likely to become a bipolar world sometime in the first half of the twenty-first century."⁴

Both Russia and the PRC are challenging the world order, which has not been observed since the end of the Cold War, and notwithstanding, Iran, North Korea, and non-state actors will continue to challenge international norms and the United States. This requires the United States to act, and act now in a more deliberate, methodical way introducing a comprehensive strategy and well thought out policies to deter adversaries from negatively impacting the current world order. If not, smaller, less influential nations will be required to 'pick sides' in order to survive, impacting regional and ultimately global stability.

During the last 15-20 years since the U.S. invasions of Afghanistan and Iraq, the DoD has been fighting a counter insurgency war while adversaries (specifically the PRC and Russia) have been modernizing, researching, and testing technological advancements of kinetic and non-kinetic weapon capabilities across all domains. Meanwhile, the United States has spent greater than one trillion dollars towards the global war on terrorism and now faces significant challenges to maintain legitimacy and international norms as the world power leading both economically and militarily when required.

The most striking development in the international system is the shift in the global balance of power from the Euro-Atlantic to the Asia-Pacific, most vividly demonstrated by the rise of China, and the emergence of major regional powers, including Japan and South Korea. North Korea's development of nuclear weapons and an increasingly diverse range of missile systems, including a nascent intermediate-range and intercontinental ballistic missile capability, poses a potent challenge to regional and international security. The growth of the Chinese economy – as of 2020, China's GDP was \$14.7 trillion compared to the United States' \$20.9 trillion,⁵ and with it, wider Chinese national power and influence, is heralding, arguably, the return of a bipolar international system.⁶

Russia, although remaining a peer of the United States in terms of nuclear weapons, and a potent military threat, in particular through its growing investment in long-range precision strike capabilities, lacks the economic foundation to fully realize its ambitions of being a distinct pole in a multipolar system. Russia's GDP in 2019 was \$1.68 trillion, having declined from a 2013 peak of \$2.29 trillion,⁷ and although Moscow is developing, for example, the PAK DA strategic stealth bomber, hypersonic weapons, and has ambitions to rebuild its navy, it faces massive economic constraints. However, whilst Russia is aware of its economic weaknesses, it is also cognizant of the West's vulnerability to economic disruption, and thus would in the event of conflict, focus on the extensive targeting of Western critical economic

⁴ Jacques Delisle and Avery Goldstein, 'Rivalry and Security in a New Era for US-China Relations', in Jacques Delisle and Avery Goldstein (eds.), *After Engagement: Dilemmas in U.S.-China Security Relations* (Washington, D.C.: Brookings Institution Press, 2021), pp. 1-49.

⁵ Data from the World Bank, available at <https://data.worldbank.org/country>.

⁶ Tunsjø, *The Return of Bipolarity in World Politics*, pp. 50-75.

⁷ "Russian Federation," available at <https://data.worldbank.org/country/russian-federation?view=chart>.

infrastructure.⁸ It warrants emphasizing, that while Russia without fundamental economic reform cannot approach the United States or China in terms of aggregate national capabilities, Moscow nonetheless remains committed to pursuing its great power ambitions and possesses a diverse range of capabilities with which it can challenge, in particular, the balance of power in the Euro-Atlantic.

Russia demonstrated significant challenges to the United States during the Syrian conflict and Islamic State campaign, experimenting and testing new military capabilities while leveraging a multi domain approach. It is the PRC, though, that continues to develop and expand offensive long-range capabilities alongside the ongoing first island chain construction presenting grave challenges to the United States, its allies and partners.

U.S. superiority was in large measure derived from its advantageous geographical position: the Atlantic and Pacific oceans isolated the United States from most threats. Given the availability of new missile technologies available to a broad range of actors who have demonstrated the willingness to rapidly adopt and deploy them to their advantage makes this no longer the case. The United States is confronted by a growing conventional precision strike threat (it has been vulnerable to Soviet/Russian nuclear attack since the 1950s) that has significant implications for U.S. military posture and strategy both in peacetime and in the event of conflict. This new dynamic and the evolving threat spectrum will make wise policy making all the more critical in the next few years.

THE EVOLVING THREAT ENVIRONMENT

The following is a summary of the key capabilities either deployed or under development in Russia, China, North Korea and Iran. It is not an exhaustive list, rather it seeks to highlight the core trends driving missile force developments, namely, the development of robust long-range precision strike capabilities, hypersonic weapon systems, strategic force modernization in Russia and China, and the growing capabilities of Iran and North Korea.

Russia

Russia possesses highly potent air and missile forces, encompassing the spectrum of short-range conventional systems through to strategic nuclear capabilities. Russia is also developing and deploying a robust conventional long-range precision strike capability and hypersonic weapons, including the Kinzhal air-launched ballistic missile (ALBM), and Avangard hypersonic glide vehicle (HGV). Hypersonic cruise missiles are also forthcoming, namely the 3K22 Tsirkon which will equip surface ships and submarines and the air-

⁸ See, for example, James Bosbotinis, "Fire for Effect': Russia's Growing Long Range Strike Capabilities," *The Wavell Room*, 5 September 2018, available at <https://wavellroom.com/2018/09/05/fire-for-effect-russias-growing-long-range-strike-capabilities-and-its-implications/>.

launched Kh-95.⁹ A ground-launched hypersonic missile with intermediate range is also under development;¹⁰ this may be a ground-launched variant of the Tsirkon. Russia's development of long-range precision strike systems poses a substantial threat, in particular to critical economic and military infrastructure and allied forces in the Euro-Atlantic, with a growing ability to threaten the United States itself.¹¹ This is part of a large-scale rearmament effort intended to modernize the Russian armed forces; on 10 November 2021, at a meeting of the Russian Military-Industrial Commission, President Putin stated that "the share of up-to-date weapons and equipment in the strategic nuclear forces exceeds 80 percent, and in the general-purpose forces, it is above 70 percent."¹² Moreover, Putin added that:

We need to focus on introducing advanced information, bio- and cognitive technology, hypersonic arms, weapons based on new physical principles, as well as cutting-edge reconnaissance, navigation, communications and control systems. We should enhance the utility and combat sustainability of military products, partly through artificial intelligence and, of course, extensive use of robotics.¹³

The core of Russia's conventional long-range strike capabilities are provided by air and sea-launched cruise missiles, namely, the Kh-50, AS-23A/B (Kh-101/Kh-102), and SS-N-30 Kalibr (with ranges of 1,500, 4,500 and 2,000 km respectively); the Kh-95 may be related to the reported GZUR, with a range of 1,500 km, capable of Mach 6 and sized to fit within the bomb bay of a Tupolev Tu-95MS Bear.¹⁴ An enlarged derivative of the Kalibr, the Kalibr-M, is also under development and will feature an increased range of 4,500 km, and due to enter service in the mid-2020s.¹⁵ It will equip surface ships and submarines, with a ground-launched variant also under development. Russia also operates supersonic anti-ship cruise missiles with a secondary land-attack capability: the 3M55 Oniks and Kh-32 (replacing the Kh-22/AS-4 Kitchen). The Oniks has a range of 450 km and 350 km in the land attack and anti-ship roles respectively. In September 2019, it was reported that an extended-range (800 km) variant of the Oniks, Oniks-M, is under development.¹⁶

⁹ "Russia Developing New Kh-95 Long-Range Hypersonic Missile", *TASS*, 3 August 2021, available at <https://tass.com/defense/1322211>.

¹⁰ "Russia Starts Developing Land-Based Hypersonic Missile With Intermediate Range, Says Putin", *TASS*, 2 February 2019, available at <https://tass.com/defense/1042977>.

¹¹ John Grady, "Russia is Top Military Threat to U.S. Homeland, Air Force General Says," *USNI News*, 18 August 2021, available at <https://news.usni.org/2021/08/18/russia-is-top-military-threat-to-u-s-homeland-air-force-general-says>.

¹² President of Russia, "Military-Industrial Commission Meeting," 10 November 2021, available at <http://en.kremlin.ru/events/president/news/67093>.

¹³ *Ibid.*

¹⁴ Piotr Butowski, *Russia's Air-Launched Weapons: Russian-made Aircraft Ordnance Today* (Houston: Harpia Publishing, 2017), pp. 18, 22.

¹⁵ "New Kalibr-M Cruise Missile With Range of Over 4,500 km in Development in Russia – Source," *TASS*, 8 January 2019, available at <https://tass.com/defense/1039123>.

¹⁶ "Russia Develops Seaborne Cruise Missile with Increased Range Capability — Sources," *TASS*, 25 September 2019, available at <https://tass.com/defense/1079734>.

Moscow can be expected to deploy a robust ground-launched long-range strike capability, including subsonic, supersonic and hypersonic cruise missiles, and precision-guided ballistic missiles. It warrants highlighting that, as part of its wider efforts to develop a long-range strike capability, Russia developed a variety of ground-launched systems that either already violated the now defunct INF Treaty whilst ostensibly bound by the Treaty, or provided a rapid breakout capability. Russia's principal ground-launched strike system is the Iskander theatre tactical missile system, comprising the Iskander-M precision-guided short-range ballistic missile and the Iskander-K cruise missile. The Iskander-M has an official range of no more than 500 km in order to comply with the INF Treaty, but may in fact be closer to 700 km, with the potential to be extended further, perhaps up to 1,000 km.¹⁷ An anti-ship capability has recently been added, utilizing technologies developed for the Kinzhal.¹⁸ A replacement for Iskander-M is being developed.¹⁹

Russia is modernizing its bomber forces and intends to resume production of the Tupolev Tu-160 Blackjack; production of the upgraded Tu-160M2 is due to commence in 2023, with a requirement for at least 50 new aircraft to be acquired.²⁰ The avionics and other systems under development for the Tu-160M2 will also be utilized in the Tu-22M3M. The modernised Backfire will reportedly regain an air-to-air refuelling capability,²¹ removed under U.S.-Soviet arms control arrangements, which together with the potential integration of the Kh-101, will enable the Backfire to operate in the strategic strike role. The operational reach of a Backfire with the Kh-101 would, depending on mission profile, potentially exceed 8,000 km. Current plans call for 30 Backfires to be upgraded.²² The implications are outlined by Mark B Schneider:

The Backfire bomber is now not classified as a heavy bomber subject to limitations under the New START Treaty. Yet, the upgrades being reported in Russian state media would make it a heavy bomber under the New START Treaty. Failure to declare it as a heavy bomber would be a violation of the New START Treaty.²³

¹⁷ Stefan Forss, "The Russian Operational-Tactical Iskander Missile System," (Finnish National Defence University, Department of Strategic Studies *Working Papers* No.42), pp.13-15.

¹⁸ "Iskander-M Adjusted to Hit Marine Targets," *Interfax: Russia and CIS Military Newswire*, 3 August 2018 (accessed via EBSCO Discovery Service).

¹⁹ "Russia Developing New Weapon to Replace Iskander Tactical Missile System," *TASS*, 19 November 2020, available at <https://tass.com/defense/1225451>

²⁰ Piotr Butowski, *Russia's Warplanes Vol. 2: Russian-made Military Aircraft and Helicopters Today* (Houston: Harpia Publishing, 2017), p. 68.

²¹ "Tupolev Tu-22M3 To Be Refueled [sic] in Mid-Air, Operate on Longer Range," *Interfax*, 3 October 2018, available at <https://interfax.com/newsroom/top-stories/22590/>.

²² "Russia's Upgraded Tu-22m3 Strategic Missile-Carrying Bomber Gets Artificial Intelligence," *TASS*, 16 August 2018, available at <https://tass.com/defense/1017454>.

²³ Mark B. Schneider, "Russia's Modernization Programs for Strategic Bombers," *Real Clear Defense*, 24 March 2020, available at https://www.realcleardefense.com/articles/2020/03/24/russias_modernization_programs_for_strategic_nuclear_bombers_115141.html.

Following on from the Tu-160M2, Russia intends to start production of its next-generation long-range bomber, the PAK DA - Prospective Aviation Complex for Long Range Aviation - in the late 2020s. The PAK DA is envisioned to be a subsonic, flying-wing low-observable bomber, with a range in excess of 9,000 miles, and armed with a variety of advanced weapons, including long-range cruise missiles, hypersonic missiles, and potentially, air-to-air weapons.²⁴

Alongside its precision strike capabilities, Russia continues to modernize its strategic nuclear forces. The Avangard HGV is slowly being deployed, equipping SS-19 intercontinental ballistic missiles (ICBMs), and eventually the SS-X-29, or Sarmat, a developmental heavy ICBM intended to replace the SS-18. The SS-27 Mods 1 and 2 constitute the core of Russia's ICBM force with a new ICBM, the Kedr, under development. Russia's naval strategic nuclear forces are also in the midst of a major modernization effort, centered on the re-equipping of its SSBN force with 10 Borei/Borei-A-class boats, each armed with 16 SS-N-32 Bulava submarine-launched ballistic missiles (SLBMs). It also warrants mention that the aforementioned cruise missile systems operated by the Russian Navy and Aerospace Forces are believed to be dual-capable, that is, capable of being armed with conventional and nuclear warheads. In addition to the potential issues surrounding the Tu-22M3M and arms control, two other Russian developmental systems may lay outside the remit of the New START, that is, the *Poseidon* nuclear-powered, nuclear-armed intercontinental autonomous underwater vehicle and the SSC-X-9 Skyfall nuclear-powered intercontinental cruise missile.²⁵

In the context of Russia's growing long-range strike capabilities, the majority of the systems discussed above are dual-capable, and results in a 'blurring' of the distinction between conventional and nuclear weapons and brings with it the problem of discrimination.²⁶ This is compounded by Russian exercises which include scenarios involving nuclear use,²⁷ and its concept of de-escalation, or which as Katarzyna Zysk suggests, could be applied as "escalate to win."²⁸ It does warrant mention that the development of long-range precision strike systems (particularly hypersonic weapons) are seen as potentially offering, in the long-term, a means to reduce reliance on nuclear weapons in strategic deterrence.

²⁴ "Prospective long-range aircraft's equipment to include hypersonic weapons, air-to-air missiles – sources," *Interfax: Russia and CIS Military Newswire*, 14 August 2017 (accessed via EBSCO Discovery Service).

²⁵ Timothy J. Wright, "Russia's *Poseidon* Poser for Arms Control and Naval Defence," *IISS Military Balance Blog*, 3 July 2020, available at <https://www.iiss.org/blogs/military-balance/2020/07/russia-poseidon-arms-control-naval-defence>.

²⁶ Katarzyna Zysk, "Escalation and Nuclear Weapons in Russia's Military Strategy," *RUSI Journal*, Vol. 163, No. 2, April/May 2018, pp. 4-15.

²⁷ For example, see James Bosbotonis, "The Russian Federation Navy: An Assessment of its Strategic Setting, Doctrine and Prospects," Special Series (Defence Academy of the United Kingdom), 10/10, September 2010; and Zysk, pp. 8-9.

²⁸ *Ibid.*, p. 6.

China

China possesses robust and broad-based air and missile forces, centered on a potent long-range precision strike capability utilizing short, medium and intermediate-range precision guided ballistic and cruise missiles deployed across land-, air-, and sea-based platforms. This provides an expansive regional strike capability, capable of targeting U.S. bases and forces and allies across East Asia, in particular Japan and Guam. Moreover, the range of certain systems, in particular the DF-26, and air and sea-launched systems, would enable China to prosecute targets in the Indian Ocean, Middle East and even eastern Mediterranean, including from within Chinese territory. The development of new long-range bombers, and the deployment of sea-launched cruise missiles, in particular on the forthcoming Type 095 submarine, will also provide China with the means to prosecute targets globally. China is also developing a more robust and survivable strategic nuclear deterrent capability, centered on particularly the new DF-41 ICBM, and the forthcoming Type 096 SSBN armed with the JL-3 SLBM, and H-20 strategic bomber.

The core of China's long-range strike capability is currently provided by the precision-guided ballistic missiles operated by the People's Liberation Army Rocket Force (PLARF), and a growing cruise missile capability, centered on the PLARF CJ-10,²⁹ the People's Liberation Army Air Force's (PLAAF) CJ-20-equipped H-6K Badger bomber, and the People's Liberation Army Navy (PLAN) with a growing number of submarines and ships (such as the Type 093 SSN and Type 052D *Luyang III* and Type 055 *Renhai*-class destroyers), equipped with either a naval variant of the CJ-10 or the YJ-18.

The PLARF currently operates four ballistic missile systems capable of long-range strikes: the 600-900 km range DF-15; the 800-1,000 km range DF-16; the 2,100 km range DF-21C; and the 4,000 km range DF-26.³⁰ The PLARF also operates the 1,500 km range DF-21D anti-ship ballistic missile (ASBM); the DF-26 is also capable of operating in the ASBM role. Moreover, in 2019, China unveiled two new theatre strike systems: the DF-17 and the DF-100. The DF-17 is a ballistic missile equipped with an HGV – the DF-ZF – and intended for precision strikes against medium and close-range targets. It is likely that the DF-ZF HGV that equips the DF-17 will be integrated with other missiles such as the DF-26. The DF-100, also referred to as the CJ-100, is a supersonic cruise missile offering long range, high precision and quick responsiveness. An air-launched variant of the CJ-100 high-speed cruise missile may equip the H-6N.³¹ China is investing in a broad-based hypersonic technology base for

²⁹ "DF-10/CJ-10/DH-10 Surface to Surface Cruise Missile," *Army Recognition*, available at <https://www.armyrecognition.com/china-chinese-army-missile-systems-vehicles/df-10-cj-10-dh-10-cruise-missile-surface-to-surface-technical-data-sheet-specifications-pictures-video-12301163.html>.

³⁰ For detailed information on the respective missile systems, see "China," *Missile Threat*, CSIS, available at <https://missilethreat.csis.org/country/china/>.

³¹ Minnie Chan and Liu Zhen, "China's new supersonic arsenal could give H-6N bomber force greater reach, military experts say," *South China Morning Post*, November 10, 2019, available at <https://www.scmp.com/news/china/military/article/3036994/chinas-new-supersonic-arsenal-could-give-h-6n-bomber-force>.

military and other applications;³² interest in an air-launched hypersonic strike capability has been reported,³³ and is likely to emerge in the near-term.

Alongside its missile assets, China is investing in the development of its air capabilities, including a new strategic stealth bomber – the H-20, and a regional bomber.³⁴ Although China's current H-6K bombers are capable of prosecuting long-range stand-off missile strikes, they are not capable of operating in defended airspace. In contrast, the H-20, with an expected combat radius of 5,000 km, and designed to be stealthy with an advanced electronic warfare capability to enhance survivability, will likely be capable of operating in the face of an adversary's air defenses. The H-6N, the newest variant of the H-6 bomber, may be capable of launching an ALBM.³⁵ China is believed to be developing at least one dual-capable ALBM, designated the CH-AS-X-13, which is believed to have a range of 3,000 km.³⁶

Although the 2019 defense whitepaper, *China's National Defense in the New Era*, states that China is committed to a minimal nuclear deterrent, and a policy of no-first use,³⁷ China is engaged in a broad-based modernization of its strategic nuclear forces which could enable a significant shift in nuclear posture. At present, the core of China's strategic nuclear deterrent is provided by silo-based DF-5, road-mobile DF-31/A/AG and DF-41 ICBMs, and six Type 094 *Jin*-class SSBNs each armed with 12 JL-2 SLBMs.³⁸ The DF-41 is likely to also be deployed in silos and possibly as a rail-based system.³⁹ The discovery of at least two potential ICBM silo fields under construction in China could result in a significant expansion in China's ICBM capabilities, as Matt Korda and Hans Kristensen explain: "If the new silos are loaded with the new MIRVed DF-41 ICBMs, then Chinese ICBMs could potentially carry more than 875 warheads (assuming 3 warheads per missile) when the Yumen and Hami missile silo fields are completed."⁴⁰ The DF-41 may however, be capable of delivering up to 10 MIRVs per missile,⁴¹ and thus enabling a much more robust Chinese strategic nuclear capability.

³² James Bosbotonis, "International Hypersonic Strike Weapons Projects Accelerate," *Aviation Week*, June 15, 2020, available at <https://aviationweek.com/defense-space/missile-defense-weapons/international-hypersonic-strike-weapons-projects-accelerate>.

³³ Liu Xuanzun, "China's H-6K bomber expected to be armed with hypersonic weapons," *Global Times*, August 6, 2019, available at <https://www.globaltimes.cn/content/1160495.shtml>.

³⁴ James Bosbotonis, "China's Regional Bomber and its Implications," *The Central Blue*, March 17, 2019, available at <http://centralblue.williamsfoundation.org.au/chinas-regional-bomber-and-its-implications-james-bosbotinis/>.

³⁵ Greg Waldron, "Chinese H-6N Appears with Mysterious Ballistic Missile," *Flight Global*, 19 October 2020, available at <https://www.flightglobal.com/defence/chinese-h-6n-appears-with-mysterious-ballistic-missile/140671.article>.

³⁶ Ankit Panda, "Revealed: China's Nuclear-Capable Air-Launched Ballistic Missile," *The Diplomat*, 10 April 2018, available at <https://thediplomat.com/2018/04/revealed-chinas-nuclear-capable-air-launched-ballistic-missile/>.

³⁷ The State Council Information Office of the People's Republic of China, *China's National Defense in the New Era*, (Beijing: Foreign Languages Press Co. Ltd., 2019), p.9.

³⁸ Hans Kristensen & Matt Korda, *Chinese Nuclear Forces, 2020*, Bulletin of the Atomic Scientists, 76:6, pp. 443-457.

³⁹ *Ibid.*, p. 448.

⁴⁰ Matt Korda and Hans Kristensen, "China is Building a Second Nuclear Missile Silo Field," *Federation of American Scientists*, 26 July 2021, available at <https://fas.org/blogs/security/2021/07/china-is-building-a-second-nuclear-missile-silo-field/>.

⁴¹ "DF-41 (Dong Feng-41/CSS-X-20)," available at <https://missilethreat.csis.org/missile/df-41/>.

The annual *Military and Security Developments Involving the Peoples' Republic of China* 2021 states with regard to Chinese ICBM developments:

The PRC is developing new intercontinental ballistic missiles (ICBMs) that will significantly improve its nuclear-capable missile forces and will require increased nuclear warhead production, partially due to the incorporation of multiple independently targetable reentry vehicle (MIRV) capabilities. The PRC has commenced building at least three solid-fueled ICBM silo fields, which will cumulatively contain hundreds of new ICBM silos.⁴²

The deployment in the coming decade of the JL-3-armed Type 096 submarine and H-20 strategic bomber will provide China with a credible triad and much greater choice with regard to posture and strategy.⁴³ On 16 October 2021, it was reported that China had conducted in August 2021, a test of a fractional orbital bombardment system (FOBS) utilizing a hypersonic glide vehicle; China has denied that it tested such a system and that the test in question was of a reusable space vehicle.⁴⁴ On 29 November 2021, Lieutenant General Chance Saltzman, deputy commander of the U.S. Space Force, confirmed that China had indeed tested a FOBS that deployed an HGV payload.⁴⁵ FOBS are intended to counter missile defense systems and in contrast to a traditional ballistic missile, place a warhead into low Earth orbit, which can then be delivered via an unexpected or unpredictable approach. The Soviet Union deployed a FOBS capability in 1969, remaining in service until 1983.⁴⁶ According to the U.S. DoD, "The accelerating pace of the PRC's nuclear expansion may enable the PRC to have up to 700 deliverable nuclear warheads by 2027. The PRC likely intends to have at least 1,000 warheads by 2030, exceeding the pace and size the DoD projected in 2020."⁴⁷ However, as David Trachtenberg has noted, the significant expansion of Chinese ICBM silo numbers together with the MIRVed DF-41, could provide "a force of some 300 Chinese ICBM silos containing missiles with 10 warheads apiece," which "would amount to

⁴² Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China, 2021*, p. VII, available at <https://media.defense.gov/2021/Nov/03/2002885874/-1/-1/0/2021-CMPR-FINAL.PDF>.

⁴³ Aaron Mehta, "STRATCOM Chief Warns of Chinese 'Strategic Breakout,'" *Breaking Defense*, 12 August 2021, available at https://breakingdefense.com/2021/08/stratcom-chief-warns-of-chinese-strategic-breakout/?utm_campaign=Breaking%20News&utm_medium=email&hsmi=149095555&hsenc=p2ANqtz-9bBcjQ1dPEpYbb7YOqNjP0CIIZhPkRjLABsjuySScn7Pi93IISmx9vcCxSMiZbuRH7OzK5BpQX58Wc2UusyMO1_ix-6UhM-X1OpJivL21azQLzqz18&utm_content=149095555&utm_source=hs_email.

⁴⁴ Theresa Hitchens, "After China's 'Hypersonic' Test, US Alarm And Many Unanswered Questions," *Breaking Defense*, 19 October 2021, available at <https://breakingdefense.com/2021/10/questions-linger-over-chinas-reported-hypersonic-space-weapon-test/>.

⁴⁵ Theresa Hitchens, "It's a FOBS, Space Force's Saltzman Confirms Amid Chinese Weapons Test Confusion," *Breaking Defense*, 29 November 2021, available at <https://breakingdefense.com/2021/11/its-a-fobs-space-forces-saltzman-confirms-amid-chinese-weapons-test-confusion/>.

⁴⁶ Braxton Brick Eisel, "The FOBS of War," *Air Force Magazine*, 1 June 2005, available at <https://www.airforcemag.com/article/0605fobs/>.

⁴⁷ Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China* 2021, p. VIII.

a greater number of ICBM warheads than the total number of deployed U.S. strategic nuclear weapons.”⁴⁸

North Korea

North Korea has developed an extensive short and medium-range missile capability that can hold at risk U.S. forces across South Korea and Japan, with a nascent ability to prosecute strikes against regional targets, in particular Guam.⁴⁹ Pyongyang has also successfully tested the Hwasong-14 and 15 ICBMs and unveiled in October 2020, the Hwasong-16 ICBM.⁵⁰ Any North Korean ICBM capability, will at present, be most limited.⁵¹ North Korea continues to enhance its missile forces, including efforts to develop precision strike and counter-missile defense capabilities through, for example, the use of maneuvering warheads and in-flight aerodynamic control: the KN-23⁵² and KN-24⁵³ are notable examples of new North Korean tactical ballistic missiles offering enhanced survivability and potentially precision strike capabilities.⁵⁴

North Korea has tested two intermediate-range ballistic missiles (IRBMs), the BM-25 Musudan and the Hwasong-12, both of which are road-mobile, liquid fueled, and likely capable of delivering a nuclear warhead.⁵⁵ In August 2017, North Korea threatened to launch Hwasong-12s toward Guam with projected aimpoints 30-40 km off the island.⁵⁶ Although the Musudan and Hwasong-12 could also deliver conventional warheads, neither missile could be employed in the precision strike role. North Korea is also pursuing the development of a submarine-launched ballistic missile (SLBM) capability, centered on the 1,900 km-range Pukguksong-3 and associated *Sinpo-class* diesel-electric ballistic missile submarine (SSB).⁵⁷

⁴⁸ David J. Trachtenberg, “Back to the Future: A Misguided Understanding of China’s Nuclear Intent,” National Institute for Public Policy *Information Series, Issue No. 507*, November 4, 2021, available at https://nipp.org/information_series/david-j-trachtenberg-back-to-the-future-a-misguided-understanding-of-chinas-nuclear-intent-no-507-november-4-2021/.

⁴⁹ James Bosbotonis, Harris S. Fried and David Shank, “Guam: A Critical Line of Defense – Threats and Means to Deter and Defend,” National Institute for Public Policy *Information Series, Issue No. 498*, 4 August 2021, available at https://nipp.org/information_series/james-bosbotonis-harris-s-fried-david-shank-guam-a-critical-line-of-defense-threats-and-means-to-deter-and-defend-no-498-august-4-2021/.

⁵⁰ For detailed analysis of the Hwasong-16 and its viability, see Michael Elleman, ‘Does Size Matter: North Korea’s Newest ICBM’, *38 North*, 21 October 2020, available at <https://www.38north.org/2020/10/melleman102120/>.

⁵¹ “DPRK Strategic Capabilities and Security on the Korean Peninsula: Looking Ahead,” A Joint study by the Center for Energy and Security Studies (CENESS) and the International Institute for Strategic Studies (IISS), 2021, pp. 54-55.

⁵² “KN-23,” available at <https://missilethreat.csis.org/missile/kn-23/>.

⁵³ “KN-24,” available at <https://missilethreat.csis.org/missile/kn-24/>.

⁵⁴ “DPRK Strategic Capabilities and Security on the Korean Peninsula: Looking Ahead,” pp. 57-58.

⁵⁵ See <https://missilethreat.csis.org/missile/musudan/> and <https://missilethreat.csis.org/missile/hwasong-12/>.

⁵⁶ “North Korea Guam missile strike plan 'ready by mid-August',” *BBC News*, August 10, 2017, available at <https://www.bbc.com/news/world-asia-40883372>.

⁵⁷ See <https://missilethreat.csis.org/missile/pukguksong-3/> and H. I. Sutton, “Unusual Submarine Likely To Increase Threat From North Korea,” *Naval News*, October 2, 2020, available at <https://www.navalnews.com/naval-news/2020/10/unusual-submarine-likely-to-increase-threat-from-north-korea/>.

In January 2021, North Korea unveiled a new SLBM, the Pukguksong-5, which may have a range of 3,000 km.⁵⁸ Moreover, Kim Jong-Un stated in an address on 9 January that Pyongyang was developing a nuclear-powered submarine, as well as hypersonic glide vehicles, and a conventionally armed intermediate-range cruise missile.⁵⁹ On 13 September 2021, North Korea confirmed that it had successfully tested a ground-launched cruise missile, which flew a distance of 1,500 km, and is likely intended to be nuclear-capable.⁶⁰ With a range in excess of 1,500 km, the new cruise missile will be capable of prosecuting targets across South Korea and Japan, and complement North Korea's arsenal of ballistic missiles, providing a multi-axis strike capability, and thereby complicating defensive efforts, for example, through evading missile defense systems. Moreover, if North Korea deploys a conventionally armed version of the cruise missile, it would provide a significantly enhanced precision strike capability. On 28 September 2021, North Korea tested, what it describes as a "newly-developed hypersonic missile Hwasong-8", equipped with a "detached hypersonic gliding warhead".⁶¹

Iran

Iran has deployed a potent arsenal of short and medium-range rocket and ballistic missiles and is developing a burgeoning unmanned air and cruise missile capability. The 14 September 2019 cruise missile and drone, and 8 January 2020 ballistic missile attacks on Saudi oil infrastructure and Iraqi bases hosting U.S. forces respectively, provide a tangible demonstration of Iran's growing air and missile threat. Whilst in July 2021, Iran conducted at least two attacks against merchant vessels using UAVs. Iran has also developed and deployed anti-ship ballistic missiles; the Khalij Fars, Hormuz-1 and Hormuz-2, all of which are variants of the solid-fuel, road-mobile Fateh-110 ballistic missile, with a range of 300 km. The Khalij Fars is believed to utilize a terminal electro-optical guidance system, whilst the Hormuz-1 is an anti-radar variant. In January 2021, Iran launched multiple medium-range ballistic missiles (MRBMs), namely the Emad, Sejil and Ghadr, as part of its "Great Prophet 15" exercises, at ranges in excess of 1,000 miles and ostensibly testing their use in an anti-

⁵⁸ Michael Elleman, "North Korea's Newest Submarine-Launched Ballistic Missile, Same as the Old One?," *38 North*, January 15, 2021, available at <https://www.38north.org/2021/01/north-koreas-newest-submarine-launched-ballistic-missile-same-as-the-old-one/>.

⁵⁹ Gabriel Dominguez and Dae Young Kim, "North Korea developing nuclear-powered submarine, tactical nuclear missiles, says Kim Jong-un," *Janes*, January 11, 2021, available at <https://www.janes.com/defence-news/news-detail/north-korea-developing-nuclear-powered-submarine-tactical-nuclear-missiles-says-kim-jong-un>.

⁶⁰ Thomas Newdick, "Everything We Know About North Korea's New 'Strategic' Cruise Missile Test," *The War Zone*, 13 September 2021, available at <https://www.thedrive.com/the-war-zone/42349/everything-we-know-about-north-koreas-strategic-cruise-missile>.

⁶¹ "Newly-Developed Hypersonic Missile Test-Fired," *KCNA Watch*, 29 September 2021, available at <https://kcnawatch.org/newstream/1632909730-439459665/newly-developed-hypersonic-missile-test-fired>; also see Joseph Trevithick, "North Korea Claims to have Tested A Hypersonic Missile (Updated)," *The War Zone*, 28 September 2021, available at <https://www.thedrive.com/the-war-zone/42560/north-korea-claims-to-have-tested-a-hypersonic-missile>.

ship role. It warrants mention that the development of a credible long-range ASBM capability will be dependent on the possession of the supporting intelligence, surveillance, and reconnaissance (ISR) kill chain to provide the necessary targeting data for the missiles.

Iran is working on improving its arsenal of ballistic missiles and heavy caliber rockets, in particular through such measures as the incorporation of terminal guidance systems, maneuvering re-entry vehicles, improved rocket engines and solid-fuel propulsion for ballistic missiles. The Emad MRBM is equipped with a maneuvering re-entry vehicle, whilst the Sejil utilizes solid fuel. A longer-range (3,000 km) variant of the Sejil, the Sejil 3, has been reported. If /when Iran develops a nuclear capability, the Sejil would provide an ideal delivery system. Being solid fueled, the missile does not require a lengthy fueling process before launch, easing transportability, and with a range of 2,000 km, has sufficient range to threaten Israel, U.S. interests and other regional geopolitical targets. In the *2020 Ballistic and Cruise Missile Threat* report, the U.S. National Air and Space Intelligence Center/Defense Intelligence Ballistic Missile Analysis Committee stated that:

Tehran's desire to have a strategic counter to the United States could drive it to field an ICBM. Progress in Iran's space program could shorten a pathway to an ICBM, because space launch vehicles (SLV) use inherently similar technologies. Since 2008, Iran has conducted multiple launches of the two-stage Safir SLV, and the larger two-stage Simorgh SLV, which could serve as a test bed for developing ICBM technologies.⁶²

Iran also provides considerable material support, including the provision of rocket, missile and drone technologies to militant proxies, most notably the Lebanon-based Hezbollah, Palestinian Hamas and the Yemen-based Houthi rebels. Tehran also provides significant support to the Bashar Al-Assad regime in Syria. Further, Iran and North Korea cooperate in the development of ballistic missile systems.

CONCLUSION: IMPLICATIONS AND RECOMMENDATIONS

The proliferation of advanced air and missile threats poses distinct tactical, operational and strategic challenges. From the proceeding discussion of Russian, Chinese, North Korean and Iranian missile force developments, several key trends are discernible. Firstly, there is a growing emphasis on the development of conventional long-range precision strike capabilities, most dramatically illustrated by Russian and Chinese systems (such as the Russian AS-23 extended-range cruise missile and the Chinese DF-100 supersonic cruise missile). Secondly, countering missile defense systems is a major driver, both through means such as speed (hypersonic weapons), evasion (for example, maneuvering warheads), and

⁶² National Air and Space Intelligence Center (NASIC) and Defense Intelligence Ballistic Missile Analysis Committee, *2020 Ballistic and Cruise Missile Threat* (Wright-Patterson AFB: OH, July 2020), p. 2, available at https://media.defense.gov/2021/jan/11/2002563190/-1/-1/1/2020%20BALLISTIC%20AND%20CRUISE%20MISSILE%20THREAT_FINAL_20CT_REDUCEDFILE.PDF?source=GovD

through multi-directional, multi-domain, complex attacks. Third, Russia and China are developing and deploying hypersonic weapons, including conventional and nuclear systems, whilst North Korea has expressed its intention to develop an HGV. The Chief of the Russian General Staff, Valery Gerasimov stated in March 2018 that: “In the long term, an increase of capacities of high-precisions [sic] weapons, including hypersonic ones, will allow moving the main part of strategic deterrence to the non-nuclear sector from the nuclear one.”⁶³ Fourth, Russia and China continue to modernize their strategic nuclear forces, whilst North Korea is developing a nascent ICBM capability. China’s nuclear force developments, in particular its “massive increase of silo-based ICBM forces” and “novel nuclear-powered capabilities,”⁶⁴ have raised concerns that Beijing may be seeking nuclear parity with Russia and the United States, with Lieutenant General Thomas Bussiere, the deputy commander of U.S. Strategic Command, suggesting that China will in the near-term surpass Russia as the principal nuclear threat to the United States.⁶⁵

In this context, DoD’s 2021 annual report on Chinese military developments states: “The PRC is also supporting this expansion by increasing its capacity to produce and separate plutonium by constructing fast breeder reactors and reprocessing facilities,”⁶⁶ which as Kristensen and Korda discuss, could enable China to acquire “significant stocks of plutonium.”⁶⁷ That is, China is expected to substantially increase the size of its nuclear arsenal over the next decade or so.⁶⁸

Responding to the evolving air and missile threat environment requires a multi-faceted approach, which would include:

- an emphasis on distributed and cross-domain operations;
- passive measures including dispersal, hardening and deception (the U.S. Air Force’s Agile Combat Employment concept is a notable example in this regard⁶⁹);

⁶³ “Improvement of hypersonic weapons to allow moving main part of strategic deterrence to non-nuclear sector - General Staff chief,” *Interfax: Russia and CIS Military Newswire*, 26 March 2018 (accessed via EBSCO Discovery Service).

⁶⁴ Bonnie Jenkins, Under Secretary for Arms Control and International Security, “Nuclear Arms Control: A New Era?,” Remarks at NATO Conference on WMD Arms Control, Disarmament, And Nonproliferation, Copenhagen, Denmark, 6 September 2021, available at <https://www.state.gov/under-secretary-bonnie-jenkins-remarks-nuclear-arms-control-a-new-era/>.

⁶⁵ Michael Martina, “China Will Soon Surpass Russia As A Nuclear Threat –Senior U.S. Military Official,” *Reuters*, 27 August 2021, available at <https://www.reuters.com/world/china/china-will-soon-surpass-russia-nuclear-threat-senior-us-military-official-2021-08-27/>.

⁶⁶ Office of the Secretary of Defense, *Military and Security Developments Involving the People’s Republic of China*, p. VIII.

⁶⁷ Hans M. Kristensen and Matt Korda, *Chinese nuclear weapons, 2021*, *Bulletin of the Atomic Scientists*, Vol. 77, No. 6, 2021, p. 318.

⁶⁸ It is possible that China’s nuclear arsenal may grow beyond what is projected by the DoD, as, for example, Mark Schneider argues, see Mark Schneider, “Why China’s Hypersonic and Nuclear Weapons Build Up is Dangerous,” 1945, December 4, 2021, available at <https://www.19fortyfive.com/2021/12/why-chinas-hypersonic-and-nuclear-weapons-build-up-is-dangerous/>.

⁶⁹ Theresa Hitchens, “Trilateral Cope North Exercise to Test ‘Agile’ Air Ops on Austere Airfields,” *Breaking Defense*, 27 January 2021, available at <https://breakingdefense.com/2021/01/trilateral-cope-north-exercise-to-test-agile-air-ops-on-austere-airfields/>.

- active measures including enhanced early warning, electronic and cyber warfare capabilities (for example, to deny, disrupt and destroy supporting kill chains for precision strike systems), counterforce targeting of threat systems and launch platforms, and expediting acquisition efforts for greater capability and capacity of enhanced, layered air and missile defense systems, including directed energy weapons and space-based capabilities.

Given the investment in cruise missile capabilities at both the regional and strategic levels by Russia, China, North Korea and Iran, the development of robust cruise missile defenses is critical. Russia is developing and deploying an expansive cruise missile capability across air, land and sea-based platforms, including extended-range systems such as the Kalibr-M and Kh-101, both with ranges of 4,500 km. A ground-launched variant of the Kalibr-M could, from eastern Russia (for example, Anadyr) prosecute targets across Alaska and the U.S. Pacific Northwest, whilst if deployed on the *Yasen*-class submarines, could from western Atlantic, strike targets across the majority of the United States. The Kh-101 combines extended range with stealth, thus further complicating the task of defending against it. This highlights the central challenge confronting the United States: although having faced the threat of Soviet nuclear strikes throughout most of the Cold War, it has not been confronted with the threat of an adversary capable of prosecuting large-scale conventional precision strikes against critical military and civilian infrastructure.

It warrants highlighting that credible air and missile defense capabilities will be critical to reassuring allies and maintaining access, basing and overflight rights, especially as potential adversaries develop increasingly robust precision strike forces. In this respect, Jan Van Tol cites Chinese military literature suggesting an objective for Chinese air and missile forces in the event of conflict would be to: “Threaten all US operating bases in the Western Pacific, including those in Japan, with persistent ballistic and cruise missile attacks — the concomitant ability to strike allies and partners has implications for their willingness to support US basing access...”⁷⁰ Likewise, Russia could also employ its long-range strike assets as a coercive instrument alongside or in support of political, economic and “activist”-based pressure to compel target states to withdraw access, basing and overflight rights. That is, the *threat* posed by precision strike systems could also be leveraged to compel states to deny access, basing and overflight rights, declare neutrality, or comply with Moscow’s demands, or be subject to kinetic strikes.

Similarly, the United States will need to possess credible homeland air and missile defenses, in particular against cruise missiles (whether low observable, supersonic or hypersonic) in order to mitigate against being deterred from intervening in a conflict by the threat of strikes against key targets in the United States. In this context, “credible air and missile defenses” would ideally mean possessing a level of capability sufficient to provide a robust defense of U.S. critical economic and military infrastructure both within the homeland, and together with allies, in the Euro-Atlantic and Asia-Pacific, especially against

⁷⁰ Jan Van Tol, *AirSea Battle: A Point-of-Departure Operational Concept*, (Center for Strategic and Budgetary Assessments, 2010), p.19, available at <https://csbaonline.org/uploads/documents/2010.05.18-AirSea-Battle.pdf>.

conventional precision strike systems. This would necessarily be focused on defending against, for example, the increasingly potent conventional strategic strike threat posed by Russia.

As the international system becomes more contested, geopolitical rivalries more intense, and the ability to conduct long-range precision strikes proliferates, the requirement for robust air and missile defense capabilities as part of a wider deterrent posture will endure. The United States is confronted by challenges to its interests in the Euro-Atlantic, Middle East and Indo-Pacific, and faces a growing conventional threat to its homeland; missile defense provides an important component of meeting the evolving and dynamic strategic environment and ensuring continued deterrence.

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INTERVIEWS

Over the past year, National Institute has conducted a series of interviews with key national security experts on a variety of contemporary defense and national security topics. In this issue of National Institute's *Journal of Policy & Strategy*, we present two interviews: one with Lieutenant General Henry "Trey" Obering III (USAF, Ret.), former Director of the Missile Defense Agency; and another with Vice Admiral Robert Monroe (USN, Ret.), former Director of the Defense Nuclear Agency. Both interviews were conducted by David Trachtenberg, Vice President of the National Institute for Public Policy. Lt. Gen. Obering discusses the evolution of missile threats to the United States and what the United States should do to improve its capability to defend against them—including the role that space can play in facilitating effective missile defenses. VADM Monroe addresses the need for the Department of Defense to regain expertise in understanding nuclear weapons effects, especially when U.S. adversaries and strategic competitors are expanding and improving their own nuclear weapons capabilities.

These interviews provide insightful context on some of the critical national security issues of our time. In today's highly dynamic international security environment, they add important perspective to the contemporary debate on the threats to U.S. national security and what actions the United States should take to address these challenges.

An Interview with Vice Admiral Robert R. Monroe (USN, Ret.)

An Interview with Vice Admiral Robert R. Monroe (USN, Ret.), former Director of the Defense Nuclear Agency and former Director of Navy Research, Development, Test and Evaluation (RDT&E). ADM Monroe looks at the history of the U.S. nuclear weapons enterprise and implications of the decline in nuclear weapons expertise.

Q. As a former Director of the Defense Nuclear Agency (DNA) - which subsequently became the Defense Special Weapons Agency (DSWA) and the Defense Threat Reduction Agency (DTRA) - do you believe the United States retains the technical talent necessary to ensure a modern, credible, and effective deterrent?

A. Absolutely not.

Background

When the Manhattan Engineer District was founded in 1939 to create nuclear weapons for the United States, its leader, General Groves, and his scientists understood that they would need two principal types of scientists to manage and sustain the development. These were: Nuclear Weapon Design experts (primarily civilian); and Nuclear Weapon Effects experts (primarily military). Cadres of these individuals were formed, worked together, and brought the project to success in 1945.



In 1947, the wartime Manhattan Project was terminated and two new organizations were formed from its staff to continue the program. Scientific research, design, and production personnel became the Atomic Energy Commission (AEC); and nuclear weapon effects and operations personnel became the Armed Forces Special Weapons Project (AFSWP) in the Department of Defense (DOD). The greatest early need was to produce numbers of nuclear weapons rapidly. The AEC subsequently evolved into the Energy Research and Development Administration (ERDA) and then the Department of Energy (DOE).

Focusing now on DOD, AFSWP controlled all DOD nuclear weapons activities for twelve years. It had custody of all DOD nuclear weapons, and did all of DOD's nuclear testing, while training the Air Force, Army, and Navy in nuclear weapons' maintenance and operations. It grew to be a huge, powerful organization.

In 1958, the Services took over the weapons, and AFSWP transitioned into a much smaller Defense Atomic Support Agency (DASA). Numbers of weapons produced became less important than advances in nuclear weapon design and effects, and in 1971, DASA became the Defense Nuclear Agency (DNA). More and more scientists were needed, and nuclear weapon effects blossomed. DNA became recognized informally as the "National Laboratory for Nuclear Weapon Effects."

Nuclear Weapon Effects

The term "nuclear weapon effects" was used several times in the above paragraph. It is necessary to know exactly what it means, and why it's so important. When a nuclear weapon detonates, an enormous amount of energy is released in a microsecond, producing blast, thermal, and radiation effects. This energy released can be shaped to be most efficient in destroying the particular type of target against which it was launched. The types and amounts of energy can be varied. Nuclear weapon effects is the military science of measuring detonation effects in detail and creating optimum weapons.

DOE tests and DOD tests are vastly different in purpose, form, and in data-recovery, so each Department conducts their own test program in Nevada; however, all planning and data recovery are fully shared.

A final comment on nuclear weapon effects: The Cold War was the world's first nuclear war. It lasted 47 years, and for most of it each state was threatening the other with nuclear weapons. We won it because we bested them in science. We had more and better scientists, and DOE and DOD bested the USSR in testing and in analyzing test results and creating better future test concepts. This DOE and DOD testing provided the scientific results that allowed our leaders and warriors to shape winning national nuclear policy, nuclear deterrence, nuclear strategy, and nuclear tactics. We conducted about a thousand tests during the Cold War. No one could ever have dreamed that this Cold War could end with total victory for

one side, total defeat for the other, without a single nuclear weapon having been detonated in anger. But we did it.

After the Cold War

Once the USSR had collapsed and the Warsaw Pact nations were freed, no major international threats were immediately apparent. Peace was declared, including a peace dividend. Defense budgets were reduced, nuclear weapons budgets were reduced even more.

The scope and nature of the nuclear reductions were, of course, a vast overreaction. They amounted to a total U.S. nuclear weapons freeze. Within five years, two rogue states—North Korea and Iran—were clearly on their way to nuclear weapons capabilities and they should have immediately been stopped by conventional U.S. military force. But our leaders chose handwringing instead. China was already well into an immense, decades-long strategic military revolution, cloaked in secrecy. Within ten years, Russia had collected its nuclear weapons from its former USSR republics and was starting a frightening new nuclear arsenal. The U.S. nuclear dismantlement continued, decade after decade.

Here are some of the early U.S. nuclear cutbacks that were imposed by the President and the Congress, through laws, regulations, Nuclear Posture Reviews, etc.

- All U.S. underground testing of nuclear weapons was prohibited;
- All “tactical” nuclear weapons were withdrawn from our military;
- Advanced research on nuclear weapons was not allowed;
- Design of low-yield nuclear weapons was forbidden;
- Design and production of new nuclear weapons was outlawed;
- The United States has had no significant pit production capability for 33 years;
- Nuclear infrastructure spending was not funded;
- The nuclear test site in Nevada has been allowed to totally deteriorate.

Possibly the most damaging nuclear setback the United States has accepted is that in our testing prohibition we have followed a zero-yield test policy for three decades, while Russia and probably China conduct highly effective low-yield tests and North Korea accepts no limits.

DOD’s “De-nuclearization”

DOD has been so “de-nuclearized” over the past 29 years that the Department lacks the essential, widespread, fundamental grounding in the military science of nuclear weapon effects. The nation is ill-prepared for the possibility of nuclear war of any type.

This challenge does *not* refer to the abilities of our Air Force and Navy to operate and maintain our strategic Triad in the superb manner that led to our Cold War victory. Those capabilities are still first-rate, as has been DOD's immense drive to replace the three delivery systems simultaneously.

The issue *does* apply to DOD's capability—as the “warrior class” of the nation—to first deter war, but if necessary, fight and win on a nuclear battlefield. Every American expects the U.S. Defense Department to be superior to the rest of the world in this.

After the eight nuclear cutbacks listed above were completed, the final de-nuclearization of DOD was accomplished in two hammer-blows, a decade apart. One was a single act, the other an extended drain.

In 1997 DNA and three other DOD organizations were combined into the Defense Threat Reduction Agency (DTRA). DTRA adopted an entirely new charter, which did not include most of DNA's functions; and almost none of its nuclear weapon effects scientific work. DTRA has continued to evolve *away* from DNA's functions for over twenty years. *DNA essentially vanished overnight.* The vital military science of nuclear weapon effects disappeared from DOD.

In 2009, President Obama announced that henceforth one of America's principal goals would be the creation of “a world without nuclear weapons.” This did not result from a national debate, nor even a major study...just an announcement. The President also announced that to achieve this goal worldwide the United States would immediately commence a continuing series of actions to reduce America's roles, missions, capabilities, and numbers of nuclear weapons. He continued these eliminations and reductions for eight years.

The most notable document which implemented Obama's policy is the *Nuclear Posture Review* (NPR) of 2010. It greatly reduced the role of America's nuclear weapons; established purposes for which nuclear weapons may not be used (a statement the United States should *never* make); prohibited nuclear weapons testing; prohibited improving the capability of any weapons; prohibited the design and production of new nuclear weapons; and many more restrictions.

For the next eight years, the President's program of “actions” to remove every aspect and element of nuclear weapons from DOD--except the strategic deterrent Triad--was highly effective. ***Nothing remained. No scientific foundation was left.***

DNA's Leadership and Management

You asked whether the United States retains the technical talent for an effective deterrent? I will answer—negatively—in some detail by describing what DNA did in helping to win the Cold War. Almost none of that is being done now.

- DNA, headed by a military three-star, who reported directly to the Secretary of Defense and Chairman of the Joint Chiefs of Staff (JCS), maintained supervisory control and oversight over all of DOD's nuclear weapons activities. DNA was manned by the top 1,500 of DOD's nuclear weapon effects leaders. You should consider that virtually NONE of the below listed activities exist in DOD today.
- DNA, working with the services, built a cadre of hundreds of DOD nuclear weapons specialists, military and civilian, with advanced degrees in nuclear weapon effects, nuclear physics, and nuclear engineering, who spent their entire careers advancing every aspect of DOD's scientific nuclear weapons capability. Uniformed nuclear weapons sub-specialists, who followed line careers but had extensive nuclear weapons education and experience, swelled these ranks to thousands.
- DNA oversaw the staffing of every necessary element of DOD with these nuclear weapons specialists and sub-specialists. These included the Office of the Secretary of Defense (OSD), JCS, Army, Navy, and Air Force secretariats, Service Chief staffs, the National Nuclear Security Administration (NNSA) and the weapons labs, Defense agencies, laboratories, war colleges, Joint and Unified Commands, NATO, and right on down to individual artillery batteries, ships, and aircraft squadrons holding nuclear weapons.
- These distributed nuclear specialists and sub-specialists created and maintained, throughout DOD, the essential professional expertise in nuclear weapons. This served many necessary purposes, including: (1) it provided instant expert nuclear weapons advice to commanders at every level; (2) it provided competent education and training in nuclear weapons to all key personnel in the commands; and (3) it provided an efficient communications network between DNA and all DOD elements with nuclear weapons for reporting problems, taking action on them, asking questions, providing answers, issuing alerts or instructions, etc.
- DNA, working with the Services, oversaw the career development of these nuclear weapons specialists and sub-specialists by rotating them through billets in the above commands.
- DNA mobilized a family of scientific laboratories specializing in nuclear weapon effects. DNA itself was the "national laboratory for nuclear weapons effects" (paralleling the Los Alamos and Livermore roles as national laboratories for nuclear weapons design). DNA's Field Command, which conducted underground nuclear weapon effects tests at the Nevada Test Site, was a major sub-command. Harry Diamond Lab (Army), Air Force Weapons Lab, and Naval Research Lab focused heavily on nuclear weapons science. The Armed Forces Radiobiology Research

Institute (AFRRI), a sub-command of DNA, investigated biological response to high-level ionizing radiation exposure.

- DNA provided the expertise to ensure the “hardness” and survivability of all U.S. weapons and sensors (tanks, ships, aircraft, missiles, silos, satellites, etc.) to the effects of nuclear weapons. They did this by continually advancing the essential military science of nuclear weapon effects. It was accomplished primarily through underground nuclear tests, but also through nuclear weapons effects simulators, kiloton-level high-explosive tests, barium releases in the Van Allen belt, etc. Each new weapons system or sensor (conventional or nuclear) is born with its own, unique set of vulnerabilities to nuclear weapon effects, and these can only be discovered and corrected through underground nuclear testing.
- The above paragraphs speak of defensive aspects of nuclear weapons effects. The offensive aspects are equally important. Every possible target for our strategic and tactical nuclear weapons (silos, submarines, air bases, troops, armor, artillery, ships, deeply buried command centers or WMD storage sites, reactors, energy facilities, manufacturing sites, transportation centers, satellites, re-entry vehicles, etc.) is most vulnerable to those nuclear weapons with a particular energy output (x-rays, gammas, neutrons, blast, thermal, etc.) Yield, height-of-burst, and delivery tactics also must be optimized for each target. This is one of the most important *military* aspects of nuclear weapons, and one which DNA led, in extremely close coordination with the Services and the weapons labs. Since the U.S. can stockpile only a limited number of nuke designs, the business of trade-offs is extremely demanding.
- As should be obvious from the two above paragraphs, DOD’s underground nuclear testing—DNA’s central role—is of paramount importance in determining the effectiveness of all U.S. nuclear weapons. DNA operated its own test site in Nevada, located at Rainier Mesa. For most tests, DNA used tunnels with horizontal-line-of-site runs from the working point. Designing and executing a DNA nuclear test was a 2- or 3-year proposition, costing tens of millions of dollars, with no margin for error anywhere.
- For most of DNA’s more general nuclear weapon effects work, the Agency contracted for each specific tasking with highly qualified U.S. contractors. During the 1960s and 1970s, DNA was responsible for increasing the number of these specialized industrial firms from about ten to almost 100.
- Essential to DNA’s remarkable role in winning the Cold War was its superb advisory board, “SAGE” (Scientific Advisory Group on Effects”). With notable elder statesmen in nuclear weapon effects like Albert Wohlstetter, Joe Braddock, Bill Graham, Bill Ogle,

Chuck McDonald, and Al and Dick Latter, SAGE kept DNA focused on the serious real-world scientific challenges that had to be overcome if America was to prevail.

- In meeting their high-level responsibilities for the security, safety, and survivability of all DOD nuclear weapons, the Secretary of Defense relied on DNA to exercise supervisory control over all DOD nuclear weapons. For example, DNA conducted regular searching inspections of Army, Navy, and Air Force nuclear weapons units, to ensure that uniform standards were used and that high levels of proficiency were maintained.
- With tens of thousands of DOD nuclear weapons spread worldwide, many in constant motion, and some being transferred between organizations daily, DNA had the immense and vital responsibility for maintaining minute-by-minute accounting for every DOD nuclear weapon.

Importantly, DOD and DOE must function as one if America is to have a superior nuclear weapons capability. DNA accomplished this in hundreds of ways daily. At present, DOD is only partially in the nuclear weapons business.

How DOD Can Recover

The thirteen bullets above describe nuclear weapons responsibilities of DOD, most of which are no longer being carried out. Clearly an immense task lies ahead.

We won the Cold War by outperforming the USSR at the new military science of nuclear weapons effects. What we must do is re-introduce nuclear weapons effects into every necessary element of DOD.

America faces rapidly advancing nuclear threats from peers, other nuclear nations, and irresponsible and belligerent rogue states. Nine nations today have large nuclear arsenals, and most are increasing and improving them. Russia is aggressively crossing borders, making nuclear threats, (including world war), developing frightening new nuclear weapons, using hypersonics to shorten our nuclear warning times, and is threatening world war. China, now a global power, appears to be vastly increasing its ICBM arsenal, is threatening nuclear attacks on nation after nation, is building an ocean-spanning Navy, and is cloaking armaments in secrecy. India and Pakistan are in a nuclear arms race, while fighting over borders and issuing nuclear threats. Israel is preparing to defend itself. North Korea, now with a growing nuclear arsenal, must be taken seriously, and Iran is moving closer and closer to nuclear weapons.

Nuclear weapons are not going away—ever. DOD simply *must* regain its nuclear weapons professionalism and eminence. I believe it can only be done by effectively re-establishing DNA, including a 3-star military Director and the same solid reporting lines from the Director

to the Secretary of Defense and Chairman of the Joint Chiefs of Staff, etc. Nuclear weapons involve so many military activities that one military leader must have this overall responsibility—as was the case during the Manhattan Project and subsequently during 47 years of Cold War.

Since few of DNA's activities have been performed in DOD for over two decades, the military officers and civilians chosen to lead DNA will have to depend mightily on Cold War DNA scientists, and on scientists in DNA's former contractor base. But most all surviving individuals are in retirement; and in a few years all will be gone. Fast action is necessary. Deferring decision on re-establishing DNA is not an option. I urge responsible decision-makers to seek the advice and counsel of Cold War nuclear weapons leaders and scientists on this issue.

An Interview with Lieutenant General Henry A. "Trey" Obering III (USAF, Ret.)

Lieutenant General Henry A. "Trey" Obering III (USAF, Ret.), Executive Vice President of Booz Allen Hamilton and former Director of the Missile Defense Agency (MDA). Lt. Gen. Obering looks at U.S. missile defense policy in light of recent changes in the strategic environment and advances in defensive technology.

Q. As a former Director of the Missile Defense Agency, do you believe the current U.S. missile defense program is sufficient to defend the nation against evolving ballistic, cruise, and hypersonic missile defense threats? Why or why not?

A. The U.S. missile defense system, which we began deploying over seventeen years ago when I was the Director of MDA, is certainly capable of defending the United States from the current threats from North Korea or Iran. However, as these threats continue to evolve and as we face a resurgent Russia and a very aggressive China, we must make dramatic improvements to the system.

For example, we need to provide global birth-to-death tracking and discrimination to maximize interceptor effectiveness and kill assessment against both ballistic and maneuvering threats including hypersonic missiles; this would enhance both homeland and regional defenses. This can only be done from space and MDA's Hypersonic and Ballistic Tracking Space Sensor (HBTSS) program is a first start to achieve this.

We need the ability to intercept warheads in complex threat suites including advanced countermeasures and decoys, and have the ability to kill multiple objects or warheads from

a single missile. Again, the Next Generation Interceptor (NGI) program begins to address this needed capability.

We need the ability to handle substantial raid sizes from rogue nations, and to handle enough of a raid by peers or near-peers to ensure an overwhelming strategic response. This demands that we develop and deploy a robust space-based kill capability to include a boost/ascent phase intercept/kill capability.

Finally, we need to fully integrate our offensive and defensive capabilities to take advantage of the precision of the defense and the responsiveness of the offense.

Q. Every U.S. administration, on a bipartisan basis, has acknowledged that U.S. missile defenses are directed against rogue states like North Korea and are not intended to defend against near-peer threats like Russia and China. For example, the Trump Administration's 2019 Missile Defense Review noted that current U.S. policy "relies on deterrence to protect against large and technically sophisticated Russian and Chinese intercontinental ballistic missile threats to the U.S. homeland." In light of the extensive nuclear buildup by both Russia and China, do you believe this policy should continue or should the United States seek to defend against all types of missile threats from wherever the source, including Russia and China?

A. I believe that we should now adjust our strategy to address the evolving threats and the 2016 and 2017 NDAA's began to lay the foundation for this. These statutes describe developing "an effective, robust layered missile defense..." and "architectures for a hypersonic defense capability" as well as providing "a plan for developing one or more programs of record for a space based ballistic missile intercept layer..."

When you put these in the context of our overall national security strategy, you can draw the conclusion that we need to develop both the capability and capacity to defend against any and all missile threats from North Korea and Iran.

And that we must have the capability to defend against any missile threat presented by Russia and China while building the necessary capacity to ensure continued deterrence when combined with our offensive forces.

In other words, we must continue to develop a qualitative and quantitative defense against rogue nations, and a qualitative defense combined with our existing and planned offensive capabilities to deter peers and near-peers, and to win if deterrence fails.

So, we need to develop next generation capabilities that will form the foundation for our missile defense strategy well into the future.

Q. Some missile defense proponents argue for improved space-based sensors but not space-based interceptors or other types of space-based “shooters,” such as directed energy systems. What role can and should space play in a layered U.S. missile defense program and how would a space-based defense contribute to both deterrence and defense?

A. I feel very strongly that the United States must move aggressively into space with precision tracking and discrimination capabilities as well as a space-based kill capability which could initially be kinetic and transition to directed energy weapons as they become available.

Such a robust space-based capability could provide not only boost/ascent phase defense capability, but also a much more robust midcourse intercept capability against large raids and more advanced threat suites typical of Russia and China.

For example, the current technology represented by nanosatellites, peer to peer networks, artificial intelligence and the rapidly emerging commercial launch industry could allow the United States to deploy a very cost effective and operationally effective constellation of space-based sensors and interceptors. MDA recently deployed two such nanosatellites in their CubeSat Networked Communications Experiment (CNCE) to explore such a capability.

This type of missile defense capability would cause a dramatic increase in the uncertainty of the success of an enemy attack and therefore, strengthen our strategic deterrence.

It would also improve the effectiveness of our terrestrially based defenses by providing global birth-to-death precision tracking. This would allow us to take full advantage of the maximum range of our interceptors which often can outfly the range of their organic radars. This would significantly increase their defended area coverage.

Q. How has the technology of missile defense changed since the U.S. withdrawal from the Anti-Ballistic Missile (ABM) Treaty in 2002? Are there defensive technology improvements that the United States should be pursuing but is not?

A. The technology of missile defense has improved significantly since 2002. We have made great strides in our sensor capabilities, our hit-to-kill technology, our discrimination techniques, our manufacturing processes, our systems reliabilities and much more.

One particular area in which we've made good progress, but we find ourselves funding-limited instead of technology-limited is that of directed energy weapons. The Airborne Laser (ABL) shot down both liquid and solid rockets back in 2010 but it was a heavy, chemically based laser which was needed to achieve a megawatt power level required for lethality.

Today, dramatic progress has been made in much lighter and more compact combined fiber and hybrid pumped diode laser technology. But we could go so much faster with a focused and well-funded directed energy program.

Q. How do you address arguments that a more robust missile defense of the homeland would be destabilizing, provocative, and fuel an “arms race”?

A. I believe history holds the answers to those types of criticisms. For example, in 2006 when the North Koreans were building their Taepo-Dong 2 multi-stage, long range rocket, they were being very evasive about its capabilities and whether it was an ICBM or space launch rocket. They also did not abide by the international norms of airspace and sea lane closures for safety.

Several former senior U.S. officials were calling on President Bush to pre-emptively strike the launch site. In the end, President Bush relied on our missile defense capabilities to defend any threatened U.S. territory. I believe a preemptive strike would have been much more provocative.

Similarly, in Israel, the Iron Dome system has been able to protect hundreds, if not thousands, of lives from rocket attacks. Without this capability, the Israelis have said they would have to use much more aggressive air and ground attacks to stop the rocket launches which would cost more lives for the Palestinians as well.

Many critics have also said that building missile defenses is expensive and that aggressors can just build more offensive missiles. Let’s look at the tragedy of 9/11. According to the Institute for the Analysis of Global Security, if you count the value of lives lost, the property damages, the lost production of goods and services, the impacts to the nation’s stock market and impact on corporate profits, etc. the price tag approaches \$2 trillion...and remember that this attack was not with a weapon of mass destruction such as an ICBM. Compare that to the total cost of all missile defenses developed and built since the program’s inception in 1983 which is below \$250 billion.

Missile defense capabilities provide senior leaders with more options for responding to aggression and buys critical decision time which they would not otherwise have.

Q. Some analysts and commentators have called for the United States to negotiate additional limitations on missile defense in order to encourage reductions by Russia and China in their offensive nuclear forces. Do you believe missile defense should be “on the table” in any future arms control negotiations?

I do not believe that missile defenses should be “on the table” for future arms control negotiations. Again, let’s look at history when the Anti-Ballistic Missile Treaty of 1972 was signed between the United States and the Soviet Union. At that time only about 7-8 countries

had ballistic missile technology including several allies of the U.S. When the U.S. abrogated that arms control treaty in 2002, the number of countries had grown to over 30 with many unfriendly to the United States. In addition, the United States found itself facing ballistic missile threats from countries such as Iran, North Korea and China that were not signatories to the ABM Treaty.

Missile defenses can protect against an accidental launch, can allow leaders more decision time to potentially de-escalate a crisis and they can make the success of a first strike by an enemy more uncertain. They can also be used to protect an offensive retaliatory capability, which again strengthens strategic deterrence.

President Reagan resisted strong pressure to put missile defenses “on the table” in his 1986 arms control talks with the Soviets at Reykjavik, Iceland. History has shown that this not only paved the way for the protection missile defenses provide today but was a significant factor in the demise of the Soviet empire.





Deterring Potential Chinese Aggression Against Taiwan

The remarks below were delivered at a symposium on “Deterring Potential Chinese Aggression Against Taiwan” hosted by National Institute for Public Policy on August 31, 2021. The symposium focused on China’s growing military capabilities and assertiveness with respect to Taiwan and measures the United States can take to prevent Chinese aggression against the island.

Jennifer Bradley

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China’s military modernization has been underway for three decades with the ultimate goal to field a “world class” military by 2049.¹ This includes a substantial nuclear modernization program improving both the technical capabilities of China’s arsenal and increasing the overall size of the force. Historically, conversations regarding deterring Chinese forceful unification with Taiwan have cordoned off the nuclear component of Chinese coercive capabilities. Whether this is due to U.S. conventional and nuclear superiority or faith in China’s commitment to minimum deterrence and its so-called “No First Use” nuclear policy is unclear. What is clear is that recent revelations of the full extent of the growth and diversification of China’s nuclear force requires a holistic reevaluation of China’s strategy, its impact on U.S. extended deterrence and the assurance of regional allies.²

Traditionally, China’s nuclear policy has been characterized by restraint. China has maintained a minimum deterrent achieved by a lean and effective force which was sufficient to deter nuclear attacks and nuclear blackmail by maintaining a secure second-strike capability.³ China’s nuclear policy evolved as China’s security environment and national objectives changed. In the 1950s China’s national objective was the establishment of a new nation under the Chinese Communist Party in a security environment dominated by two nuclear armed superpowers. During this time, the United States attempted to blackmail China with nuclear weapons on two separate occasions spurring China to develop its own nuclear deterrent. In 1957, Chinese Premier Zhou Enlai stated, “China is developing nuclear weapons to oppose nuclear threat, not to engage in a nuclear arms race with the nuclear

¹ Department of Defense, *Military and Security Developments Involving the People’s Republic of China 2021, Annual Report to Congress*, p. I, available at <https://media.defense.gov/2021/Nov/03/2002885874/-1/-1/0/2021-CMPR-FINAL.PDF>.

² Charles A. Richard, “Statement of Charles A. Richard, Commander United States Strategic Command Before the Senate Committee on Armed Services,” Senate Committee on Armed Services, April 20, 2021, p. 6, available at <https://www.armed-services.senate.gov/imo/media/doc/Richard04.20.2021.pdf>.

³ Eric Heginbotham, Michael S. Chase, et al., *China’s Evolving Nuclear Deterrent*, RAND, 2017, p. 20, available at https://www.rand.org/pubs/research_reports/RR1628.html.



states.”⁴ On the very day that China tested its first nuclear weapon in 1964, the Chinese government declared, “China will not at any time or under any circumstances employ nuclear weapons first.”⁵ This policy protected China’s national objectives and achieved China’s security objectives without straining the nation’s limited resources.

The reforms and opening ushered in by Deng Xiaoping changed the national objectives of China. He set China on the path of modernization with the national objective of attaining great power status in a security environment that was, generally, mostly benign. In addition to the role of deterring nuclear attack and safe-guarding China’s peaceful development, nuclear weapons were identified as “a pillar for China’s great power status” and “symbols clearly displaying China’s international position.”⁶ To achieve this, China’s force remained small, focused on a minimum deterrent force capable of delivering a credible second strike.

Today, Xi Jinping has set ambitious national objectives for China, often referred to in shorthand as “the Chinese Dream.” In addition to setting milestones for China’s development, its objectives include leading “the reform of the global governance system”, altering aspects of the status quo viewed “as incompatible with the sovereignty, security, and development interests” of China and “full reunification” with Taiwan on Beijing’s terms.⁷ China’s security environment to achieve these objectives has also deteriorated. And in turn, it appears the role of nuclear weapons in China is changing and expanding.

The discovery of two fields of ballistic missile silos in western China by commercial imagery are just the latest in a long list of developments to China’s nuclear force.⁸ In addition to increasing its number of silos by a factor greater than 10, China has invested and deployed road mobile ICBMs with multiple independent reentry vehicles, intermediate-range ballistic missiles that include precision strike and lower yield warheads, development of a follow on SSBN capable of targeting “the U.S. homeland from Chinese littoral waters,” and expansion

⁴ Ibid., p. 16

⁵ Ibid., p. 18

⁶ Project Everest, *Science of Military Strategy 2013*, China Aerospace Studies Institute, U.S. Air University, February 2, 2021, p. 290, available at https://www.airuniversity.af.edu/Portals/10/CASI/documents/Translations/2021-02-08%20Chinese%20Military%20Thoughts-%20In%20their%20own%20words%20Science%20of%20Military%20Strategy%202013.pdf?ver=NxAWg4BPw_NylEjxaha8Aw%3d%3d.

⁷ Department of Defense, *Military and Security Developments Involving the People’s Republic of China 2021, Annual Report to Congress*, op. cit., p. 3

⁸ Ma Xiu, Peter W. Singer, “China’s New Missile Fields are Just Part of the PLA Rocket Force’s Growth,” *Defense One*, August 11, 2021, available at <https://www.defenseone.com/ideas/2021/08/chinas-new-missile-fields-are-just-part-pla-rocket-forces-growth/184442/>.

of its bomber capability which provides China with a regional triad.⁹ The result is, at minimum, a doubling of the size of China's nuclear force in the next decade.¹⁰

The comprehensive development in China's nuclear force calls into question if the PRC believes that a nuclear posture of minimum deterrence is adequate to support its national goals and objectives in a dangerous security environment. In fact, the diversified development in both the quality and quantity of its nuclear force, as well as the increased flexibility, strongly suggests that China is moving away from minimum deterrence.¹¹ If China assesses that minimum deterrence is inadequate, what will they replace it with? How will this impact its No First Use policy? And finally, given China's use of other elements of national power for coercion, will nuclear weapons become another coercive tool? The recent video shared on an official Chinese Communist Party Channel may begin to answer that question. The video, now deleted, contained the threat to use nuclear weapons against Japan should it intervene in a conflict over Taiwan.¹²

This makes clear that the United States and our Indo-Pacific allies are facing an increased and uncertain conventional and nuclear threat from China. Because China's stated goals to change the status quo of the international system are at odds fundamentally with U.S. and allied vital national interests, this threat should not be expected to dissipate any time soon.

Currently the United States is reexamining its national policies to include its nuclear policy. The credibility of U.S. deterrence, extended deterrence and assurance is dependent on many of the choices currently being debated. What should be beyond debate is that China's continued expansion of its nuclear capabilities, coupled with a lack of transparency and a tradition of denial and deception, has injected increased uncertainty into the international environment.¹³ It is imperative that U.S. policy decisions account, not only for the challenge China poses to U.S. and allied national interests, but hedge for the uncertainty surrounding China's future nuclear posture and policy. This requires continued support for U.S. recapitalization of the nuclear force, maintaining the triad and potentially increasing the flexibility of the force. This will ensure our policy choices support deterrence and extended deterrence while enhancing assurance and the strength of the alliances.

⁹ Patty-Jane Geller and Peter Brookes, Factsheet, "China's Growing Nuclear Threat," The Heritage Foundation, May 3, 2021, available at https://www.heritage.org/sites/default/files/2021-05/FS_209.pdf.

¹⁰ Department of Defense, *Military and Security Developments Involving the People's Republic of China 2021, Annual Report to Congress*, op. cit., p. 92.

¹¹ Patty-Jane Geller and Peter Brookes, Factsheet, op. cit.

¹² Adam Cabot, "China's Nuclear Threat Against Japan: Hybrid Warfare and the End of Minimum Deterrence," *RealClear Defense*, August 6, 2021, available at https://www.realcleardefense.com/articles/2021/08/06/chinas_nuclear_threat_against_japan_hybrid_warfare_and_the_end_of_minimum_deterrence_788893.html

¹³ Thomas G. Mahnken, *Secrecy & Stratagem: Understanding Chinese Strategic Culture*, Lowy Institute for International Policy, February 2011, p. 24, available at https://archive.lowyinstitute.org/sites/default/files/pubfiles/Mahnken%2C_Secrecy_and_stratagem_1.pdf.

In closing, as China's national objectives and perception of its security environment change, it has adapted its nuclear policy and force structure in order to support its goal. The change of China's posture and potentially, policy, to support its current ambitious national objectives has increased uncertainty and the potential for miscalculation in the region. This has a significant impact on U.S. deterrence, extended deterrence and the assurance of allies. Unlike the Cold War, the threat of a bolt out of the blue nuclear attack is not the primary deterrent challenge, though one for which we are still, and must be prepared. Today, the chief concern is the "risk of deterrence failure in regional wars under the nuclear shadow."¹⁴ And China's nuclear shadow over Taiwan is increasing.

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In the 1970s, the United States and the People's Republic of China (PRC) established a convenient peace. In 1969, after a decade of worsening tensions, the PRC and Soviet Union had fought a border war, making the Sino-Soviet split, in the making for the past decade, obvious to all. We now know that in October 1969, China issued a nuclear "launching preparations" order,¹⁵ a readiness status roughly equivalent to America's DEFCON 1. America's Defense Intelligence Agency—even after the crisis was defused—believed there to be a chance greater than one in ten of a Soviet "disarming" first strike on China,¹⁶ indicating the tension approximated the uncertainty and fear felt during the U.S.-USSR Cuban Missile Crisis. Although fears of nuclear war fell after October 1969, the USSR undertook a massive build-up of troops on the border, raising prospects for conventional war.

In America, we remember that it was Nixon that went to China. In China, bringing Nixon to China is remembered as a technique to "foil" Soviet war plans that reflected China's strategic culture. An article in a Chinese military journal remarks that: "Chinese leaders put the wisdom of using softness to overcome hardness to use by not entering into direct conflict with the Soviet Union on the battlefield, but instead used superior diplomatic methods to achieve cooperation with the United States. This forced the Soviet Union to retreat in the face

¹⁴ Brad Roberts, "Orienting the 2021 Nuclear Posture Review," *The Washington Quarterly* (Summer 2021) p. 134, available at https://cpb-us-e1.wpmucdn.com/blogs.gwu.edu/dist/1/2181/files/2019/03/Roberts_TWQ_44-2.pdf.

¹⁵ Michael S. Gerson, *The Sino-Soviet Border Conflict: Deterrence, Escalation, and the Threat of Nuclear War in 1969*, Center for Naval Analyses, November 2010, p. 51, available at https://www.cna.org/cna_files/pdf/d0022974.a2.pdf.

¹⁶ CIA, National Intelligence Estimate 11-13-73, *The Sino-Soviet Relationship: The Military Aspects*, September 20, 1973 (declassified June 2004), available at https://www.cia.gov/readingroom/docs/DOC_0001098218.pdf.

of difficulties and also avoided a large-scale armed conflict. It also won a stable international environment for China's subsequent development."¹⁷ The cordial relations that developed between the United States and PRC during the 1970s helped calm the Cold War by incentivizing the USSR to pursue better relations with both the United States and China, lest it become the odd person out in a stable strategic marriage directed against the Soviet threat.

One issue made the U.S.-China rapprochement possible: the partial resolution of the Taiwan question. The United States agreed to end its mutual defense treaty with the Republic of China, to withdraw American soldiers, and to switch diplomatic recognition to the PRC. The agreement—called the Shanghai Communiqué—established peace between the United States and China for the first time since the creation of the PRC in 1949, when first ideological differences and then the Korean War prevented the establishment of diplomatic relations. At the time, Henry Kissinger assumed that China would reunify Taiwan in the not-so-distant future.¹⁸ But Mao—and later, Deng—did not make this a priority, believing time to be on China's side, and other objectives (domestic stability and economic growth) more pressing. The 1979 Taiwan Relations Act, which specified that any “effort to determine the future of Taiwan by other than peaceful means” would be a matter “of grave concern to the United States,” and that the United States would continue “to provide Taiwan with arms of a defensive character,” was sufficiently limited and ambiguous that it did not destroy the convenient peace established between the United States and China.

When the Cold War ended, the status quo of convenient peace was preserved, even after Beijing's crackdown on democracy protesters in 1989. The Taiwan issue was raised again in the 1995-1996 Taiwan Straits Crisis, when the dispatch of two Carrier Strike Groups to the region forced China to abandon any attempt at coercive diplomacy vis a vis Taiwan. Humbled by the experience, and impressed by the demonstration of modern warfare in the earlier Persian Gulf War, China began a massive drive for military modernization, including the development of anti-ship ballistic missiles, with the intention of reconfiguring its armed forces to win a potential war fought over Taiwan.¹⁹ The EP-3 Incident, which followed in 2001, showed that there were some cracks in the U.S.-China relationship, but the convenient peace was still able to hold due to concessions from both sides. When the United States redirected its attentions to the Middle East for the following two decades, Chinese military

¹⁷ Huaxia Contemporary Military Affairs, “珍宝岛事件到底因何而起？后来竟然改变了世界格局！” Translated by Matthew McGee.

¹⁸ Mao Zedong to Henry A Kissinger, memorandum, “Memorandum of Conversation between Mao Zedong and Henry A. Kissinger,” October 21, 1975, Gerald R. Ford Presidential Library, National Security Adviser Trip Briefing Books and Cables for President Ford, 1974–1976 (Box 19), accessed at Wilson Center Digital Archive, available at <https://digitalarchive.wilsoncenter.org/document/118072>.

¹⁹ Tai Ming Cheung, “Racing from Behind: China and the Dynamics of Arms Chases and Races in East Asia in the Twenty-First Century,” in *Arms Races in International Politics: From the Nineteenth to the Twenty-First Century*, ed. Thomas Mahnken, Joseph Maiolo, and David Stevenson (Oxford: Oxford University Press, 2016), pp. 247–69.

power continued to develop during a period the Chinese conceived as its “strategic opportunity”²⁰ to develop its capabilities in a relatively benign international environment.

In the 2020s, U.S.-China relations are entering a new era. The convenient peace—which could hold during the Cold War, and then during a period of relative Chinese weakness and other American priorities—seems less convenient today. Taiwan has once again become a focal point of contention. The ambiguity that allowed Taiwan to be an “agree to disagree” issue is being eroded. In part, this reflects the CCP’s apparent timeline for reunification (likely 2049). In part, it reflects the reality that many American elites were never comfortable with severing the defensive relationship with Taiwan, and that absent a Great Power or Middle East threat, doing so felt—and feels—like unnecessary appeasement.

This is the context for the increasing tension that defines the Taiwan issue today. How can a Chinese invasion of Taiwan be deterred in this decade?

Relying on a deterrence-by-denial strategy is not viable in the short to medium term because of asymmetries in geographic location and relative commitment disparities between the United States and China vis a vis Taiwan, as well as China’s ever-increasing A2/AD capabilities, which now give it de facto sea control out to the First Island Chain.²¹ At best, a “successful” U.S. denial campaign in response to a Chinese invasion would result in a major war that would likely escalate horizontally quickly, to the detriment of all participants, and indeed, the world. Threatening such a war over a non-vital interest is not credible. At best, such a deterrence strategy relies on “a threat that leaves something to chance.” The United States has to threaten going to the brink in order to deter an invasion. But it is far from difficult to imagine a Chinese leader, increasingly pressured by audience costs and internal ambitions to fulfill the “China Dream,” taking a risk and calling for the cards to be put on the table. Were this to occur, the United States would then have to choose between a Great Power war of potentially incalculable cost and standing aside. In the actual event, compromise over Taiwan, unjust though it may be in an ideal world, may then appear more convenient, as indeed it was in the 1970s.

A deterrence-by-punishment strategy allows the United States to avoid the thorny conundrum outlined above. Instead of seeking to deter a Chinese invasion by literally interdicting and repelling it, the United States would work to deter a Chinese invasion by creating such conditions that credibly suggest that the costs of such an invasion would outweigh the benefits. Getting the equation here may be tricky, but it is far from impossible.²²

²⁰ Academy of Military Science, Zhanlue Xue, trans. China Aerospace Studies Institute, 2021 (Beijing: Military Science Press, 2013), pp. 13, 98.

²¹ J Michael Dahm, *Introduction to the South China Sea Military Capability Studies* (The Johns Hopkins University Applied Physics Laboratory, 2020), available at <https://www.jhuapl.edu/Content/documents/IntroductiontoSCSMILCAPStudies.pdf>.

²² The full argument is introduced in: Jared Morgan McKinney and Peter Harris, “Broken Nest: Deterring China from Invading Taiwan,” *Parameters* vol. 51, no. 4 (Winter 2022-2021), pp. 23–36.

The obvious place to start is that Taiwan needs to be able to offer a robust defense, preventing a *fait accompli*. Unfortunately, Taiwan in significant ways is not taking the China threat seriously, meaning that not even this first step is guaranteed for the 2020s.²³ Credible experts have shown how Taiwan could choose a different path, but so far not much seems to be changing.²⁴

The second step would be for Taiwan to develop the societal will and means to credibly threaten long-term guerilla resistance in response to a Chinese occupation. In theory, the means are well known.²⁵ In practice, malaise and poor morale signal that this is not happening today.²⁶

Additionally, the United States and its allies would need to be prepared to threaten significant economic sanctions, akin to those imposed on Russia after its seizure of Crimea. The Chinese most likely expect such a response to be the floor, a default response regardless of what other decisions factor into a U.S. response. The response of regional actors, including a successful effort to double Japan's defense budget from 1 percent to 2 percent of GDP (something proposed by the LDP, but currently a pipe dream), would also lock-in additional long-term costs, some of which significantly improve the position of the United States and its allies.

Beyond these steps, Taiwan should seek to threaten what might be called mutual technological destruction (MTD). If China invades Taiwan, Taiwan immediately destroys the physical capital of its semiconductor industry (particularly that of TSMC) and seeks to limit China's ability to acquire the industry's human capital. Taiwan would also target (with ballistic and cruise missiles) China's leading semiconductor foundries on the mainland, and the United States would implement a preplanned semiconductor embargo, coordinated with South Korea, Singapore, and Japan, leaving China with limited production capacity for any chips whatsoever, and essentially no access to leading generation chip designs.

Such a program would destroy Taiwan's economy. But it would also radically harm China's economy. Joined with the other ways to impose costs (a robust defense, a lasting insurgency,

²³ Patrick Porter and Michael Mazarr, "Countering China's Adventurism over Taiwan: A Third Way," Lowy Institute, May 20, 2021, available at <https://www.lowyinstitute.org/publications/countering-china-s-adventurism-over-taiwan-third-way>; Robert D Blackwill and Philip Zelikow, "The United States, China, and Taiwan: A Strategy to Prevent War" (New York: Council on Foreign Relations, 2021).

²⁴ Heino Klinck, "Taiwan's Turn – Deterring and Derailing an Existential Threat," *Information Series #508* (Fairfax, VA: National Institute for Public Policy, November 11, 2021), available at https://nipp.org/information_series/heino-klinck-taiwans-turn-deterring-and-derailing-an-existential-threat-no-508-november-11-2021/.

²⁵ Otto C Fiala, *Resistance Operating Concept (ROC)* (MacDill Air Force Base, FL: Joint Special Operations University Press, 2020), available at <https://www.hsdl.org/?abstract&did=838149>.

²⁶ Kathrin Hille, "Taiwanese Shrug off China Threat and Place Their Trust in 'Daddy America,'" *Financial Times*, September 22, 2021, available at <https://www.ft.com/content/b0e3fa00-42af-4914-9323-38c75ac46d67>; Joyu Wang and Alastair Gale, "Does Taiwan's Military Stand a Chance Against China? Few Think So," *The Wall Street Journal*, October 26, 2021, available at <https://www.wsj.com/articles/taiwan-military-readiness-china-threat-us-defense-11635174187>.

general economic sanctions, and regional adjustments to the balance of power), the overall package of tailored deterrence could threaten such costs that, except in the most desperate of circumstances, a Chinese invasion of Taiwan would be better delayed than undertaken. But only, that is, if the threat were credible. Could Taiwan credibly threaten to destroy its own economy?

The credibility of an incredible threat is at the center of the plot of China's most successful work of science fiction, *The Three Body Problem* by Liu Cixin.

In Liu's trilogy, an alien race, the Trisolarans, launch an invasion of earth. Earth has no way to deny the Trisolarans a successful invasion, as it is multiple ages behind technologically. Eventually, however, Luo Ji, a Chinese sociologist, discovers a form of deterrence by punishment, called "dark forest" deterrence. The discovery is based on the insight that the universe is in a Hobbesian state of war by default, where the very ability to communicate with other life forms implies a technological capacity—sooner or later—to threaten other races. Not willing to take this risk, one alien group or another strikes first. When Luo Ji realizes this, he sees that Earth would only need to threaten to reveal Trisolaris' position to the galaxy, and it would be able to threaten the "complete destruction of both the deterrer and the deteree" because any such action would also give away the location of Earth.²⁷ The question then becomes whether such a threat could be credible. Would Earth destroy itself—an action entirely without profit or purpose—in a situation where deterrence had failed? In the novel, for such a threat to work, it is said that 80 percent probability of carrying out the action was required. To credibly promise such destruction, the power to make such a decision was handed to a single individual, called a Swordholder. Luo Ji fulfilled this mission first for 50 years. But towards the end of his tenure, the whole deterrence system came under heavy criticism for being "mundicidal," resting as it did on the threat to destroy two worlds. Luo Ji was therefore replaced by a Swordholder more suitable for an age that perceived itself as "on the cusp of achieving universal peace and love" and in which, it was thought, "deterrence is no longer so important."²⁸ The new Swordholder lasted fifteen minutes only, for the Trisolarans, who had already assessed her credibility, immediately ordered an attack on earth. The new Swordholder had never thought the unthinkable,²⁹ and so she could not deter. The attack succeeds, and the Earth is conquered.

Assuming a device for technological destruction were created, could a modern Taiwanese leader serve as a credible Swordholder? Would she understand that the world Taiwan lives in is not one of peace and love, but of Hobbes' state of nature? Would she be willing to think the unthinkable, or at least convince the Chinese that she did?

²⁷ Cixin Liu, *Death's End*, trans. Ken Liu (New York: Thor, 2016), p. 129.

²⁸ *Ibid.*, p. 142.

²⁹ *Ibid.*, p. 175.

Taiwan has more agency for deterring a Chinese attack than analysts seem to realize. As deterrence by denial, which relies upon the United States, becomes less viable, and hence less credible, Taiwan should commit itself to a deterrence-by-punishment strategy that requires it—and not the United States—to take the decisive actions. In 1993, Taiwan spent 5 percent of its GDP on its military. Today, it spends approximately 2 percent.³⁰ This decline in spending relative to GDP began during the post-Cold War period of peak American power. But even as the unipolar world ends, Taiwan has not awoken to the new reality.

Taiwan needs to make swords. Even more than that, it needs a Swordholder.

Chad Sbragia

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I'd like to briefly tackle the topic associated with "the stakes involved for China, the United States, and regional allies with respect to possible Chinese military action against Taiwan." My aim is to re-frame some of China's aspirations and draw out some implications for the United States to argue that Washington and our allies and partners must rethink what "Deterring Potential Chinese Aggression Against Taiwan" really means.

The call is for Washington to consider a new paradigm that encompasses deterring Chinese aggression against Taiwan but in context of broader conditions, and to recognize China already has.

The bottom line is that a paradigm concentrated exclusively on deterring potential Chinese aggression against Taiwan is no longer sound, and probably hasn't been for two decades. In hindsight, the premise and assumptions that set this paradigm were malformed at origin and have never recalibrated or adjusted with the change in dynamics. In a contemporary context, the existing paradigm is convenient because it is reductionist; but perhaps catastrophically so.

It is now clear that this framing is inappropriate as U.S.-China systemic rivalry intensifies. The United States cannot continue to ignore that the combination of strategic, political, and military objectives and tools needed create this deterrent effect results in unresolvable contradictions.

³⁰ Stockholm International Peace Research Institute, "Military Expenditure by Country as Percentage of Gross Domestic Product, 1988-2020," available at <https://sipri.org/sites/default/files/Data%20for%20all%20countries%20from%201988-2020%20as%20a%20share%20of%20GDP%20%28pdf%29.pdf>.

What must be deterred, the subject and object of deterrence, and why deterrence is necessary, in current form, is overly narrow, fails to address contextual imperatives, and distorts both strategic guidance and war planning constructs.

The starting line is that CCP unification of Taiwan is not an isolated end in itself, but one goal of a broader range of interconnected goals.

Specifically, the CCP has established mid-century goals to achieve the Chinese dream of national rejuvenation—which includes unification of Taiwan—that altogether set conditions to achieve even longer-range national aspirations beyond 2050. Thus, in Beijing’s view, unification of Taiwan is a non-negotiable necessity for Beijing’s agenda, one of many, and the United States remains an omnipresent and often intrusive obstacle for China to achieve those ends.

However, while unification is an imperative, it is also inextricably linked to other national goals, so Beijing calibrates how Taiwan is unified by the degree to which it impacts those other goals, such as disrupting China’s developmental targets or generating security alignments hostile to CCP modernization.

This calculus manifests throughout CCP strategies, including China’s military theory and strategy of Active Defense, which is defined as the dialectical unity of war restraint and war winning, and key enrichments like the concept of effective control.

There are critical implications of the cross-strait conditions that should inform any U.S. paradigm about deterrence that includes potential use of force, and I’ll offer two points of many.

Point 1: When and why the CCP will choose force is not a single driver.

- First, the absolute imperative of Taiwan unification with the mainland by mid-century puts conflict on a count-down timer if Taipei doesn’t accede. The implication is that deterrence diminishes over time and ultimately reaches a zero axis at some point, so that while U.S. deterrence is important it is neither a sustainable condition nor permanent solution. Deterrence fails slowly.
- Second, Beijing’s preference is for a willing or peaceful unification because it imposes the least cost on its other national goals but, even then, the necessity to unify will trump Beijing’s patience by mid-century. The implication is that U.S. deterrence through cost imposition still matters and, if the United States can sustain an advantage, Washington’s deterrent threat can constrain Beijing’s choices to exploit

perceived opportunities to use force. In fact, this element is crucial, but by definition is an expansion of deterrence beyond Taiwan.

This is why Beijing's gambit is to modernize its capacities so as to be so overwhelming that Taiwan can't resist, and that as U.S. power weakens, Washington's capabilities to impose cost are so marginalized so as to be ineffective. Here, the U.S. capacity to generate deterrence matters, but only to the degree that Washington can maintain a relative advantage and then only as a diminishing delay, and increasing as a function of systemic rivalry, not Taiwan.

- Third, the two aforementioned conditions for a Chinese use of force—the time constraint or CCP opportunism due to a perceived advantage in balance of power—are joined by a third, which is Beijing's necessity to prevent a permanent loss of Taiwan in the interim. Even if the clock has not run out or Beijing still assesses it is not strong enough to deter U.S. intervention, the CCP remains compelled to militarily coerce Taipei if conditions arise that may result in a permanent loss.

For example, consider a Taiwan declaration of independence or the stationing of foreign troops in Taiwan that could prevent forced unification. The implication is that China will use force to prevent a permanent loss of Taiwan, even if Beijing concludes China will lose. Thus, the United States both (1) cannot assume China will be restrained by an unfavorable correlation of forces and that (2) the United States must also consider constraint of external conditions that may lead Beijing to use force.

This is why I find arguments about when China can or will use force one dimensional; China will use force by 2050, when China perceives an advantage, or when Beijing perceives a permanent loss is imminent. War could happen tomorrow and increases in likelihood every day.

Point 2: Dynamics of changing capacities and systemic rivalry.

- First, let's discuss scale and intensity. If you pay attention to the Defense Department's annual report to Congress on *Military and Security Developments Involving the People's Republic of China*, you'll note that DoD's first annual report to Congress in 2000 assessed the "PRC's armed forces at that time to be a sizable but mostly archaic military that was poorly suited to the CCP's long-term ambitions" and "lacked the capabilities, organization, and readiness for modern warfare."³¹

³¹ Department of Defense, *Military and Security Developments Involving the People's Republic of China 2020, Annual Report to Congress*, p. i, available at <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>.

China's composite national power has undergone an eye-watering increase, as the 200-page DoD 2020 report contends, yet the paradigm to deter potential Chinese aggression against Taiwan has remained essentially unchanged.

While in the past the deterrent effect from America's military power could serve to deter China's aggression against Taiwan, the implication now is that the scale and intensity of force necessary to stop China is escalating so high that conflict ceases to be constrained around Taiwan and transforms into great power war. This is a different paradigm, and in fact negates the former.

- Second, war termination criteria become untenable and protracted war emerges. As the scale and intensity of conflict crosses a threshold into great power war, it changes the underlying conditions to achieve war termination. Previously, the simple calculus was that Beijing ventured military coercion and either succeeded or not. Now, the implication is that the force necessary by either side to prevail definitively, but short of near total or nuclear war, is improbable and the crisis degenerates into protracted conventional great power conflict.
- Third, the corollary is that any conflict with the United States that may generate such conditions re-frames crisis not as a war of unification, but determinant of great power preeminence. The implication is that crisis over Taiwan cannot be bifurcated from the larger U.S.-China systemic rivalry and Beijing's pursuit of preeminence within the global system. A Taiwan-related crisis, therefore, may not only result in unification or defense of Taiwan, but may settle all accounts between the two powers. This seems to be the trajectory of China's thinking.

Surveys of Chinese literature on conflict, Taiwan, military exercises, future warfighting concepts, and tasks for the PLA and the CCP's foreign affairs establishment are clear that Beijing increasingly focuses on defeat of the United States as the priority task, with compellence of Taipei a central, but definitively secondary, matter.

The call is for a paradigm that matches the conditions. More simply, we are continuing to develop a deterrence calculus that solves for "X," when the veracity and efficacy of solving for "X" is questionable. We must think about solving for "Y."

In other words, whereas previously Taiwan was both the subject and object of potential crisis, now the subject of any conflict is U.S.-China strategic rivalry even if the object is Taiwan. This reframes the paradigm around U.S.-China competition and accounts for Taiwan, or any other conditions that may result in conflict, as merely a catalyst. The implications for use of force, posture objectives, scale and intensity, and war termination change under this paradigm, and merit further consideration.

There are other implications for a poorly framed paradigm, such as how Taiwan’s political situation will bear on U.S. response options, or the attractiveness of the defense of Taiwan to our allies and partners rather than the defense of the U.S. role in the Indo-Pacific and its alternative, which is dominance by Beijing.

The underlying issue is that when the United States assumes political and military risks, stakes its legitimacy, and involves allies, it must do so based on a combination of strategic and political objectives. Strategic, to make clear the circumstances for which conflict is necessary; political, to define the governing framework to sustain the outcome both domestically and internationally.

As Henry Kissinger noted, the United States often fails because of its inability to define attainable goals and to link them in a way that is sustainable by the American political process. The military objectives are often too absolute and unattainable and the political ones too abstract and elusive. The failure to link them to each other has involved America in conflicts without definable terminal points and caused us internally to dissolve unified purpose in a swamp of domestic controversies.





Deterrence Implications of the U.S. Withdrawal from Afghanistan

The remarks below were delivered at a symposium on “Deterrence Implications of the U.S. Withdrawal from Afghanistan” hosted by National Institute for Public Policy on September 28, 2021. The symposium focused on the long-term ramifications of the U.S. withdrawal on the credibility of U.S. deterrence of adversaries and extended deterrence commitments to allies.

Jacek Durkalec*

Jacek Durkalec is Senior Fellow at the Center for Global Security Research at the Lawrence Livermore National Laboratory. This presentation reflects his personal views.

My presentation will focus on the implications of the U.S. withdrawal from Afghanistan for the credibility of U.S. extended deterrence commitments—promises made to America’s treaty allies in Europe and the Indo-Pacific.

I will make three general points.

First, I will set out the broader context of how the Allies have historically perceived the credibility of U.S. extended deterrence commitments.

Second, I will discuss whether and to what extent the Allies’ long-standing perceptions have been changed by the withdrawal from Afghanistan.

Third, I will briefly discuss how the U.S. withdrawal may have influenced the cost/benefit calculations of America’s adversaries.

I.

Let me start by putting the U.S. withdrawal from Afghanistan in a broader context of how U.S. Allies in have perceived U.S. credibility.

Three contextual observations stand out:

First, when assessing the credibility of the U.S. security commitments (both in terms of the U.S. resolve and capabilities), the U.S. regional allies have been primarily preoccupied with the U.S. military deployments and actions in their own regions.

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The Allies have tended to have very parochial views on security. This is understandable given their focus on their core national security interests.

For example, Poland cares primarily about the U.S. readiness to compete, deter and win in Europe; Japan and Australia care about the U.S. military position in the Indo-Pacific; ROK wants credible deterrence against DPRK.

This does not mean that what the U.S. does in the other regions does not matter.

Allies draw lessons about the American capabilities and resolve based on U.S. actions around the world.

This means that the Afghanistan debacle may have much smaller effects on Allies perceptions of U.S. credibility than would be the case if the U.S. unilaterally withdrew some portion of its forces from Europe or the Indo-Pacific.

My second observation is that the credibility of U.S. extended deterrence is already under strain, both in terms of the U.S. perceived capability and resolve to use it.

This would be the case even without the horrifying images from the Kabul airport.

European confidence in the long-term reliability of the U.S. commitment to transatlantic security has been shaken by the shift in U.S. strategic priorities to Asia, and Trump's transactional approach to the Alliance.

In the Indo-Pacific, the allies have been concerned about negative shifts in the regional conventional balance of power and greater U.S. vulnerability to DPRK and Chinese nuclear threats.

These concerns, not the U.S. withdrawal from Afghanistan, have had the most decisive impact in shaping allied perceptions of American credibility.

My third observation is that over the next decade, it is likely that the credibility of the U.S. extended deterrence will be tested as never before.

- This would have been the case even without the haphazard withdrawal from Afghanistan.

China's growing military assertiveness and confidence, strengthened by its nuclear-build-up, will stress-test U.S. assurances in the Indo-Pacific.

For Europeans, it will be painful to adjust to the reality that Europe is no longer the primary theater for the United States, especially in the context of the U.S. need to simultaneously deter two nuclear-armed peer competitors.

In other words, over the coming years the consequences of the Afghanistan withdrawal will be overshadowed by more immediate allied concerns.

II.

Given this context, does the withdrawal from Afghanistan matter for the credibility of U.S. extended deterrence, or more specifically, for the assurance of allies?

The effects are mixed.

On the one hand, there are some clear negative effects:

With the withdrawal, the allied concerns about the U.S. reliability are not diminishing; they are accumulating.

- The withdrawal exacerbates anxieties about the consequences of the decreasing role of Europe in the U.S. national security strategy
- Critics in Europe may say that “what happened to Afghanistan happens when you are strategically irrelevant. It may happen to us.”
- The withdrawal adds to long-standing allied concerns about U.S. unilateralism and not taking allied perspectives into account.
- The withdrawal puts into question the competence of U.S. institutions in policy implementation.
- The withdrawal shows the limits of the U.S. (and allied) military power and patience to achieve long-term political outcomes.
- The U.S. withdrawal from Afghanistan reduces incentives for Allies to support the U.S. in matters which do not involve their direct national security interests.

Still, there is a silver lining in the U.S. decision to disengage from Afghanistan.

Most importantly, the impact of the withdrawal on the Allies’ perceptions of the U.S. credibility is not decisive.

Long-term U.S. credibility will depend primarily on how the United States handles the most pressing challenges for extended deterrence posed by Russia, China and DPRK.

Any negative effects of the U.S. withdrawal from Afghanistan can be limited by the U.S. actions to reinforce its alliances in Europe and the Indo-Pacific.

What is also important is that for some observers, especially in the Indo-Pacific, the withdrawal shows the U.S. ability to make hard strategic choices. It also leads to hopes that it would free U.S. military resources for current U.S. strategic priorities.

III. Impact on perceptions of adversaries

I have four brief observations.

First, the U.S. withdrawal from Afghanistan has furnished ammunition for the information struggle.

- It feeds Russia and China narrative about U.S. decline and untrustworthiness.

Second, Russia and China may be emboldened to exert influence in their respective “near abroad” regions and in other areas in which the U.S. stakes are much lower.

Third, the withdrawal may feed Chinese and Russian perceptions that time is on their side—that they may outlast the United States in the long-term strategic competition, and that the United States will eventually lose its patience.

- If these are real Russia and China calculations, both countries may double on their efforts to make strategic competition more costly and risky to the United States.

Last but not least, it seems unlikely that the Afghanistan withdrawal itself would embolden Russia, China or DPRK to test the U.S. treaty commitments.

- If they decide to do so, they would be primarily motivated by the U.S. failure to strengthen existing regional extended deterrence arrangements.

Heino Klinck

Heino Klinck is former Deputy Assistant Secretary of Defense for East Asia.

Thank you, David, for including me in this distinguished panel and thanks also to the National Institute for Public Policy for convening this very important and timely discussion, particularly in light of today’s hearings on the Hill.

The *National Security Strategy* of 2017 and the *National Defense Strategy* of 2018 were clear in that we are in an era of great power competition and both documents articulated our vision to compete, deter, and win against revisionist competitors such as China (as well as Russia). During my tenure at the Department of Defense as the Deputy Assistant Secretary for East Asia, I was the unofficial “Major Partners and Allies in Asia” DASD. We successfully implemented both of these guiding documents across the whole of U.S. government as well

as in conjunction with our allies, partners, and like-minded countries not only in Asia, but throughout the world, including European states such as Germany, France, and the UK.

As I reflect on the previous administration's overall track record of national security successes (and failures) in the region, I can confidently say that our network of alliances and partnerships within my AOR were stronger, more resilient, and jointly focused on the common challenge of our generation, namely an aggressive China, than ever before. I do not align myself with the assertion that the U.S. had to rebuild its alliances overseas after January 20th. Prior to the Afghan debacle, I didn't subscribe to the mantra that "America is Back" primarily because we never left. However, now I wonder (frankly, I fear) that we America may be back to 1979.

Let me say up front that I try not to be a Monday morning quarterback, something all too common in Washington. I continue to wish my successors and the current Administration all possible success in protecting our interests abroad. Their success is our Nation's success, or at least, it should be.

Unfortunately, the manner in which our Government decided, communicated, and then executed the withdrawal from Afghanistan has implications far beyond the war on terrorism. Namely those implications go to our credibility as a Nation, Ally, and Partner; our ability to accurately forecast tactical, operational, and strategic outcomes; our ability to deter and dissuade adversaries and enemies from taking actions contrary to our national security interests; and our apparent disregard and disdain for basic consultations and info sharing with those allies who served with us, shoulder-to-shoulder.

To be honest, I believe history will view our decades of conflict in Afghanistan (and Iraq) as distractions that provided China with a strategic opportunity to leapfrog us in many ways. Regardless, this does not justify the haphazard way in which the White House went about withdrawing our forces. For the record, I believe it was in U.S. national interests to maintain a footprint in Afghanistan.

- First, to ensure Afghanistan never becomes a sanctuary in which terrorists can plan, organize, and train to launch attacks against the United States, its allies, and its interests.
- Perhaps more importantly, to serve as a forward presence in Central and South Asia for potential contingency operations as well as, frankly, an intelligence platform to be utilized not only for regional priorities, but also in the context of Great Power Competition (GPC).
- To be clear, U.S. military presence on China's periphery was an obstacle to Chinese ambitions in the region.

Although the Biden Administration is still drafting its *National Security Strategy* and *National Defense Strategy*, I anticipate that both documents will continue the focus that we placed on

GPC and the China Challenge. It is within that context, that our harried, uncoordinated, and chaotic process of withdrawal from Afghanistan causes me the most concern. This chaos is being viewed and portrayed as a tragic mix of U.S. incompetence, negligence, and weakness.

Our less than perfect exit from Afghanistan undoubtedly furthers the long-standing Beijing narrative of U.S. decline. This inevitability, as posited by the CCP, really became integral to China's global strategic communications following the financial crisis of 2008. Beijing has carefully crafted a story line that democracy and capitalism are not the only model of effective governance nor perhaps even the best model. Instead, Beijing has offered that techno-authoritarianism with a measure of capitalism controlled by the State offers a viable, successful alternative model for those that are willing to forego democracy and freedom for their people.

Furthermore, the U.S. decision to withdraw all forces from Afghanistan underscores another enduring Chinese proposition that the United States is a Paper Tiger. In the 1950s and 1960s, Mao ZeDong and the CCP consistently referred to the United States as a Paper Tiger relying almost exclusively on nuclear deterrence. Consistently, the CCP has backed up their messaging by pointing to the Chinese People's Volunteer Army success during the Korean War as well as to America's eventual withdrawal from Vietnam. Even more recently in the 1990s, Chinese commentators referred to Somalia Syndrome in the wake of our Blackhawk down moment in Mogadishu and the subsequent withdrawal. The Afghan debacle has provided the CCP with an additional data point to add to their list of examples that America does not have staying power.

My concern is that Beijing might misread or interpret lessons learned from Afghanistan concerning our commitment that could perhaps embolden them to make dangerous decisions that could lead to conflict in the South or East China Seas, for instance. The stakes in such as conflict would dwarf the interests we abandoned in Afghanistan. I can think of no more dangerous scenario than Beijing's miscalculation on how we might respond to a contingency involving a treaty ally or a partner whose legitimate self-defense we are obliged to support.

Moreover, Beijing menacing messaging to third parties, our allies and partners (particularly Taiwan), has only been strengthened by our precipitous retreat. In short, Beijing is pushing the narrative that the United States cannot be trusted and that countries in the Indo-Pacific should strike deals now with the CCP before it's too late and they potentially feel the wrath and power of the PLA. As David's recent article of 11 September 2021 pointed out, China is amplifying its vitriol against Taiwan and Japan in light of U.S. decisions and actions regarding Afghanistan by even calling into question China's declared nuclear policy of no first use.

The apparent lack of consultation with our closest allies in coordinating the exit from Afghanistan is worrisome across the board. It conveys a go-it-alone attitude that is ironically reminiscent of inaccurate and politically skewed and motivated descriptions of America First

during the previous administration. Beyond the obvious operational imperatives to coordinate our withdrawal, politically and diplomatically it calls into question whether or not, or to what extent, we take into account the concerns, requirements, and needs of our allies and partners. Beyond the public statements of consternation and complaints David so vividly cited in his recent article, there are undoubtedly uncomfortable internal discussions going on in places like the Russell Building in Canberra, Ichigaya in Tokyo, and other defense ministries in the Indo-Pacific.

Focusing on the Indo part of the region, it bears highlighting that allowing Afghanistan to fall to the Taliban, is a tremendous blow to India's security interests. India has only recently become a more active member of the quad, exemplified by its military participation in exercises it had previously eschewed. India now faces a two-front dilemma in its defense planning. With the Taliban in charge, Pakistan's western flank is secured allowing Pakistani forces to redeploy to the border with India. In concert with PLA pressure along the Line of Actual Control, India now faces potential military pressure along two flanks.

Despite the Administration's purported "laser focus" on Great Power Competition, the Afghan debacle undermined our efforts to compete, and counter Chinese malign activities by undermining our credibility, calling into question our commitment to allies and partners, and providing dangerous fodder for miscalculation.

Our competitive advantage has always been our network of partners and allies. The U.S. Government must work closely with the like-minded to ensure that we contest China's diplomatic, informational, economic and other efforts in the Indo-Pacific and globally to gain broad influence and undermine the collective efforts of the United States and its allies and partners to maintain regional balances of power favorable to our mutual interests. The measure of our success in competition will lie in our ability to continuously compete from a sustained position of advantage—both militarily and otherwise—against this increasingly bellicose power, in a responsible, but dominant way that continues to underwrite the international rules-based order. Unfortunately, the costs of our strategic failure in Afghanistan as measured in terms of deterring a bellicose China, organizing future coalitions of the willing, and securing America's role as a reliable, global leader are still to be fully calculated in the Indo-Pacific.

Maj Gen James Lariviere (USMC, Ret.)

Maj Gen James Lariviere is Senior Vice President for Department of Defense Operations at GardaWorld Federal Services, and a former advisor to the Afghan National Army.

Over the last 20 years I've observed or participated in the conflict in Afghanistan from three perspectives. On 9/11 I was a professional staff member on the House Armed Services Committee staff working in the Defense Policy Group as we watched the attacks on the twin

towers and Pentagon. As a Reserve Marine officer, I was mobilized in 2002 to serve with the 4th Marine Expeditionary Brigade (Anti-Terrorism) overseeing the Marine security task force at the Kabul Embassy. Later, in 2006, I served in Afghanistan as the mentor/advisor to the G-3 of the Afghan National Army. As the Commanding General, 4th Marine Division I oversaw the deployment of multiple infantry battalions and independent companies to Afghanistan. Finally, as the Senior VP for DoD Operations at GardaWorld Federal Services, I supervised nearly 1000-armed civilian security guards protecting 17 separate U.S. military locations across Afghanistan evacuating the last three contractors from HKIA on 29 August 2021, the day before the final withdrawal from Afghanistan.

The ignominious withdrawal from Afghanistan and triumph of the Taliban after 20 years of conflict should trigger some serious soul-searching among policymakers and senior military leaders alike. It is hard to see the collapse of the Afghan government and subsequent withdrawal of U.S. forces from Afghanistan as anything other than a self-inflicted defeat. The administration's decision to withdraw on a date certain with little or no consultation with our NATO allies and the chaotic way in which the evacuation was executed will have serious strategic implications for the United States and our allies well into the future.

In the immediate aftermath of 9/11, there was no question that the Bush Administration had to intervene in Afghanistan to pursue Osama bin Laden and defeat Al Qaida. On Capitol Hill at that time there was an appetite for immediate action against the perpetrators of the attacks. However, once the Taliban fell and bin Laden and his AQ followers disappeared or dispersed, Afghanistan quickly became the economy of force operation as attention shifted to Iraq. Efforts to build a functioning Afghan government and capable Afghan Security Forces foundered and policy makers across administrations struggled to articulate a defined end state. The continued U.S. military presence in Afghanistan did provide the benefit of denying the Taliban and other terrorist organizations the ability to use Afghanistan as a launch pad for terrorist attacks in the West. The United States settled into a steady state management of the political and military situation in Afghanistan with no clear end to the U.S. and NATO presence. The Biden Administration entered office predisposed to end "endless wars" and presented the decision to withdrawal as a false choice – either abide by the withdrawal decision made by the Trump Administration or engage in an unacceptable escalation of conflict. This either shows the administration is either inflexible or unimaginative. Other options were available and certainly this administration has reversed other Trump era policies.

The impacts of the chaotic withdrawal are significant. The message sent to our adversaries is plain. America, and perhaps democracies in general, appear unable to sustain a long-term commitment to messy counterinsurgency or nation building-type operations. Terror groups around the world will see this as an opportunity to re-emerge in Afghanistan and elsewhere secure in the knowledge that the United States is unlikely to intervene. The administration has framed the withdrawal as an end point to the War on Terror. With all apologies to

Tolstoy, we may be no longer interested in the War on Terror, but the War on Terror may still be interested in us.

The administration also stated keeping forces in Afghanistan was no longer in the U.S. national security interest and that those forces there were needed as the United States shifted forces to the Indo-Pacific. Yet the 2,500 military personnel and nearly 18,000 contractors in Afghanistan were certainly sustainable over the long haul and not a serious distraction to the shift to great power competition. China, Russia, Iran and North Korea will all be encouraged by our defeat in Afghanistan. Each will see this event as an opportunity to further their malign geopolitical agendas. China in particular may take the view that the United States may not have the staying power in any direct confrontation. The Trump Administration talked about “America First” but kept the United States engaged with our international partners. The Biden Administration says that “America is Back” but appears to be fully implementing the “America First” policy it says it rejects.

As a result, America’s ability to reassure allies and build coalitions has been significantly damaged. Key partners such as Israel, Japan, and our NATO allies (who were left in the lurch on the way out of Afghanistan) have had their confidence shaken in America’s leadership. The United States is seen as increasingly unreliable just at the time when we need to build alliances to counter China in the Indo-Pacific region. The recent announcement of the AUKUS agreement may help allay some of those concerns. But countries like Taiwan, whose military strategy relies on U.S. support in case of a military incursion by China, may question whether the United States is truly committed to coming to the rescue in case of military conflict.

The senior U.S. military leadership also has some soul searching to do. If the only reason to have general officers is to achieve victory on the battlefield, then U.S. senior military leadership has fallen short. Over the 20 years of conflict in Afghanistan military leaders were never able to engage policy makers and articulate a clearly defined military mission in Afghanistan or define a desired end state that was feasible, achievable, affordable and sustainable. The result was 20 years of war fought in successive 1-year rotations each with its own short-term goals. As in Vietnam, we won every battle and lost the war. The United States and NATO wound up exactly where we began, with the Taliban in control of Afghanistan.

Analogies have been made to Vietnam, and certainly there will be a future Ph.D thesis on how we failed to militarily defeat the Taliban. Vietnam triggered an existential examination of the U.S. military that transformed the military from a hollow, conscript force to the all-volunteer, high-tech force that it is today. Junior leaders in Vietnam like Colin Powell, Shy Meyer, Al Gray and others vowed that they would never again repeat the mistakes of Vietnam. I don’t yet detect that same sort of existential soul searching in the U.S. military in the immediate aftermath of Afghanistan. But it is still early. What is clear is that the military establishment, just as it did after Vietnam, is happy to leave counterinsurgency behind and move on to building the conventional forces necessary to engage in the great power

competition with Russian and China. Even as that shift takes place, military leaders would do well reflect on the last 20 years and study the policy-strategy disconnect in Afghanistan that led us to where we are today.

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Michael Rühle

Michael Rühle is Head of Hybrid Challenges and Energy Security in NATO's Emerging Security Challenges Division. The views expressed are the author's own.

The hasty Western withdrawal from Afghanistan once again has raised doubts in some quarters about the United States' willingness and/or ability to remain the leader of the West. While the groundwork for a withdrawal had been laid by the Trump Administration's deal with the Taliban in Doha in February 2020 (a deal that excluded the Afghan Government), the implementation of the withdrawal by the Biden Administration still came as a shock to many observers, both in the U.S. and abroad. It almost appeared as if President Biden was bent on turning his predecessor's statements on "America first" into a true foreign policy doctrine.

In what follows, I will argue that the withdrawal from Afghanistan is not likely to erode the United States' credibility as a provider of extended deterrence – at least not in the eyes of its friends and allies. It is a different matter when it comes to some opponents, who – like Saddam Hussein – may draw different conclusions about the U.S.' political and military stamina and thus may be more willing to test Washington's red lines. However, staying engaged in a long and inconclusive expeditionary mission just to avoid being perceived as irresolute does not constitute a viable alternative, either. Domino theories can be misleading. Hence, my assumption that as long as the Afghanistan withdrawal remains a singular event and is not seen as the beginning of a global U.S.' retrenchment, the damage should remain limited.

Four reasons stand out:

First, mission fatigue. While the departure from Afghanistan was chaotic, and the United States may indeed be the first to blame for this, the fact remains that the Afghanistan mission had run out of steam. Many NATO Allies had long reduced their military presence to a mere token one, and there was a widespread view that despite certain areas of progress this country was not going to become more stable, let alone self-sustaining. In other words, the U.S.' decision to withdraw was surprising in its sudden and rigid way, but the allies, too, wanted to get out. Whether the Allies will engage in a thorough "lessons learned" process on the Afghanistan mission remains to be seen, since it appears that both sides of the Atlantic want to forget Afghanistan as quickly as possible. European Allies will join the U.S. in trying to deflect from their collective failure, whatever it may take.

Second, European weakness. The talk of European “strategic autonomy”, that was first provoked by President Trump’s dismissive attitude vis-à-vis allies and alliances, and that grew louder as the Afghan withdrawal unfolded, should not be taken at face value. The immediate case in point—the protection of Kabul airport—was so weak that it could not serve as a basis for a fundamental reorientation of European security and defense policy. With the UK having left the EU, some EU members toying with nuclear abolition schemes, and the Eastern Europeans clinging to the U.S. as their ultimate protector whom they do not want to frustrate, the gulf between the Europeans remains too deep to expect any major progress in this regard. Does anyone still remember the European battlegroups? Once introduced with much fanfare, they were never used. In short, disappointment over Afghanistan will not become the catalyst for a new, geopolitics-savvy Europe.

Third, vital and not-so-vital interests. About 1993, amidst the turmoil in ex-Yugoslavia, then U.S. Secretary of State Warren Christopher reportedly said that NATO was “more important than Bosnia”. A cynical statement, perhaps, but the thinking behind it was clear: the transatlantic security relationship was a vital U.S. interest and thus must not be derailed by skirmishes among allies over a small place in the Balkans. Hence, assuming that NATO and the security of European allies continue to be much more vital to the U.S. than was the future of Afghanistan, the damage to U.S. credibility as NATO’s backbone would remain limited. To recall, even the Vietnam disaster did not fundamentally alter Western Europe’s continued belief in U.S. extended deterrence commitments. Thus far, the Biden Administration has not demonstrated a lack of interest in European security. It remains committed to NATO and even reversed Trump’s decision to withdraw several thousand U.S. troops from Germany. In short, while NATO allies may find some of Washington’s policy moves bewildering, at least for now they have little reason to doubt the U.S. commitment to the defense of Europe.

Fourth, new U.S. priorities. The strategic outlook of the United States is shifting, largely due to the rise of China. As the new technology-sharing alliance between the U.S., UK and Australia (AUKUS) suggests, the U.S.’ focus on China is real, and so are its extended deterrence commitments vis-à-vis its Asian-Pacific allies. Australia and Japan, for example, will certainly welcome that the pivot is finally moving from rhetoric to reality. Indeed, some observers, such as Edward Luttwak, have interpreted President Biden’s decision to withdraw from Afghanistan as part of a larger plan to end costly and long-term overseas engagements in order to be better able to focus on China.¹ The logic of the “pivot” is sound, as the fall of Taipei would deal a far heavier blow to U.S. global credibility than the fall of Kabul (or Saigon). It is obvious that for the Europeans, who do not want the U.S. to lower its military presence on the Old Continent, Washington’s focus on the Asia-Pacific region is a mixed blessing. They have fewer security interests in that part of the world, nor do they have

¹ Edward Luttwak, “Yes, Biden does have a strategy for Afghanistan and China,” *Panorama* (online), available at <https://www.panorama.it/luttwak-biden-strategy-afghanistan-china>.

the military capabilities to join the U.S. in containing China's assertiveness. However, Europeans will have to accept that the U.S.' pivot is inevitable. The key is to ensure that the pivot does not come at the expense of European security.

To conclude, withdrawing from costly engagements may not always have the desired effect of reducing the burden. In many cases, it may simply allow competitors to fill the vacuum that the West leaves behind. The result might well be a net loss for the U.S. and its allies in terms of geopolitical influence and, as in the case of Al Qaeda operating from within pre-9/11 Afghanistan, the (re-)emergence of a major threat. The Western withdrawal from Afghanistan thus may risk inviting a repetition of the situation that led to 9/11 in the first place. Nevertheless, the U.S. and its allies giving up on Afghanistan is not the main problem for the United States' global credibility. The decisive question is whether this hasty withdrawal remains a singular episode or whether it marks the beginning of a far more substantial reduction of US commitments worldwide. If the Biden Administration—very much like President Trump—were to start equaling global engagement with carrying a heavy burden that needs to be shed, it would pull the rug from what remains of the “liberal order” that the U.S. once helped create.





US Nuclear Employment Strategy

The remarks below were delivered at a symposium on “U.S. Nuclear Employment Strategy” hosted by National Institute for Public Policy on October 20, 2021. The symposium focused on changes in U.S. nuclear weapons employment policy from the Obama Administration to the Trump Administration and prospects for further changes in the Biden Administration.

Franklin C. Miller

Frank C. Miller is former Special Assistant to the President and Senior Director for Defense Policy and Arms Control.

Introduction

My goal is to put the 2020 U.S. *Nuclear Employment Strategy* report into a broader context.

There has been much consistency in U.S. nuclear targeting policy—and properly so. This consistency has been obscured from time to time by various nicknames Administrations have used to describe U.S. nuclear policy, e.g., “Strategic Sufficiency,” “Essential Equivalence,” “Countervailing Strategy”—but for the most part these names have only confused both our friends and our enemies.

And in fact, when the Commander of U.S. Strategic Command, Admiral Charles Richard, recently commented that our policy was largely unchanged from the Kennedy Administration, he was condemned by the “progressives” as promoting an obsolete policy—but that is because those critics do not understand the basic principles of deterrence.

Returning to the Basics

U.S. deterrence and targeting policy took mature form first during the Eisenhower Administration. This was “Massive Retaliation,” essentially a no-holds barred single option plan. The Kennedy Administration replaced that with “Flexible Response” doctrine, based on the premise that a president needed options to deter better whatever options the Soviets (or other enemies) might have.

That principle—“multiple options to deter an enemy’s potential options”—remains valid and remains our practice today. Over time, more flexibility has been introduced into the plan as the number of enemies grew and their capabilities and options grew.

Where there was a significant change was in “target selection”

During the Nixon-Ford Administrations, we took a wrong turn and began mirror imaging U.S. values on the Soviet leadership. The “Nuclear Targeting Policy Review,” conducted in the



1977-1979 timeframe at the direction of then Secretary of Defense Harold Brown, refocused U.S. target selection policy on what the Soviet leadership truly valued, since it would be that leadership, not the oppressed people they ruled over, which needed to be deterred from conducting aggression. Authoritarian rulers value:

- Themselves
- Their ability to remain in power, therefore their internal security forces
- Their armed forces, both nuclear and conventional, and
- The industrial potential to sustain war

Since 1979, U.S. policy has focused on holding these “elements of state power” at risk. Over time our options have been increasingly tailored to fit the threat situation. Regardless of what you may hear about “tailored deterrence,” that work began immediately after the USSR dissolved and not in subsequent administrations.

What changes might the Biden Administration seek to introduce in US policy?

There are three areas here:

- Modifying declaratory policy to adopt a “No First Use” or “Sole Purpose” policy. This would be a dangerous departure from long-standing U.S. policy and has no virtues and many vices.
- Reducing U.S. strategic nuclear forces below the New START Treaty limit of 1,550 deployed nuclear weapons. The 1,550 level was deemed sufficient eleven years ago when Russia was not seen as threatening and China was not even in the discussion. It is almost inconceivable that the same number is adequate today when both nations are seen as real potential enemies
- Finally, on the positive side, is the discussion of integrating our nuclear deterrence policy with the other forms of deterrence policy. The Russian Chief of the General Staff, Valery Gerasimov, has essentially turned war into a horizontal affair. Beijing has followed suit.

Aggression can (and will) come at us in multiple domains simultaneously. The old-fashioned U.S. view of war as occurring in vertical stovepipes is no longer appropriate. To deter effectively, we must be able to meet our enemies simultaneously across the board.

Eric S. Edelman

Eric S. Edelman is former Under Secretary of Defense for Policy and former U.S. Ambassador to Turkey.

Thank you, David, for that introduction. And thank you to the National Institute for Public Policy for hosting this event on the Nuclear Weapons Employment Guidance Report to Congress. Since the Congressionally mandated 2020 report went to the Congress in December 2020 when the nation was distracted by the post-election turmoil it did not receive nearly as much public attention as it deserves and certainly not as much public discussion as the 2013 document produced by the Obama Administration. This webinar can help to begin to change that lamentable situation and the discussion is particularly timely as the Department of Defense is in the midst of considering the 2022 Nuclear Posture Review.

It is also good to have for discussion purposes the extremely useful article by Rob Soofer and Matt Costlow, that appears in the inaugural issue of the *Journal of Policy and Strategy*, which serves as a guide to the continuities and differences between the 2013 and 2020 NUWEPS guidance documents.

The changes, it seems to me, mostly reflect the dramatic changes in the international security environment that have taken place over the nearly decade-long interval between the two documents. They also reflect, in my view, the failure of the hopes expressed in the 2010 NPR and the 2013 guidance that what might generously be called “a cycle of virtuous emulation” among other countries would follow from U.S. efforts to reduce the role and salience of nuclear weapons in its national security strategy. Alas, the reality appears to be that the reverse has taken place. Nuclear weapons have assumed more significance in Russian and Chinese strategy as demonstrated by Russia’s ongoing nuclear modernization and its introduction of novel and exotic nuclear weapons into its arsenal as well as China’s “breathhtaking expansion” (to quote STRATCOM commander Admiral Charles Richard) of its nuclear and strategic capabilities notably a quantitative and qualitative build-up and diversification of his means of delivery of nuclear weapons. At the same time, as we have seen in recent days, North Korea continues to make advances in the direction of both a larger nuclear arsenal than many had anticipated but also many of the appurtenances of a full nuclear triad of delivery systems.

The result of these developments has been to on the United States (as the 2020 guidance document notes) a requirement to plan and posture U.S. nuclear forces to credibly deter a larger and more varied spectrum of possible nuclear scenarios than when it had the relative luxury of planning against only one true nuclear peer competitor.

This as the Guidance document and Rob and Matt’s article points out puts a premium on limited, graduated, flexible options for decision-makers. This requires tailored deterrence strategies supported by flexible capabilities. Too often, in our public debates on these issues these kinds of options are labeled as “war fighting” options as if the authors are advocating

nuclear weapons use rather than making the potential use of nuclear weapons credible to potential adversaries and therefore reinforcing and strengthening nuclear deterrence. As Rob and Matt usefully note these kinds of red herrings are not helpful to a measured and responsible debate on deterrence strategies.

If the call for tailored deterrence and better options for policymakers sounds familiar that is because there has been more continuity than change in nuclear strategy over the past sixty years. In some sense the entire history of the evolving U.S. nuclear posture since the days of “massive retaliation” and the subsequent development of the Single Integrated Operational Plan (SIOP) for nuclear weapons use has been an effort to provide more flexible, credible options for Presidents most of whom were appalled by the destructive power that would be unleashed by executing the SIOP. Our fellow panelist, Frank Miller, is one of the few people who was successful at actually making meaningful changes in that direction.

The current moment, and the 2020 Nuclear Weapons Employment Guidance document highlights this, coincides with intensifying great power competition between the U.S. and Russia and China but also rapid technological developments in artificial intelligence, micro-electronics, space, hypersonic and other technologies that may well put us on the cusp of “revolution in military affairs” that transforms the battlefields of the future. In that sense, this moment may bear some similarity to the late 1950s and early 1960s when the Single Integrated Operational Plan was put in place, at the instance of then President Dwight D. Eisenhower, and the advent of ground based Intercontinental Ballistic Missiles (ICBMs) and submarine launched ballistic missiles (SLBMs) were revolutionizing thinking about nuclear weapons and deterrence.

In these periods of rapid geopolitical and technological change it is easy to lose sight of some of the fundamental verities of nuclear deterrence. To remind myself of those I recently returned Henry Kissinger’s meditations on the impact of ICBMs and SLBMs on thinking about deterrence in his 1961 book, *The Necessity of Choice*. I beg everyone’s indulgence as I read a quotation from the book because as you all know there is no such thing as a “short” quote from Dr. Kissinger who noted that in the wake of the advent of nuclear weapons and particularly ICBMs and SLBMs:

...the success of military policy depends on essentially psychological criteria. Deterrence seeks to prevent a given course by making it seem less attractive than all possible alternatives. It therefore ultimately depends on an intangible quality: the state of mind of the potential aggressor. From the point of view of deterrence a seeming weakness will have the same consequences as an actual one. A gesture intended as a bluff but taken seriously is more useful as a deterrent than a bona fide threat interpreted as a bluff. Deterrence requires a combination of power, the will to use it, and the assessment of these by the potential aggressor. Moreover, deterrence is a product of these factors and not a sum. If any one of them is zero, deterrence fails. Strength, no matter how overwhelming, is useless without the

willingness to resort to it. Power combined with willingness will be ineffective if the aggressor does not believe in it or if the risks of war do not appear sufficiently unattractive to him.... The psychological aspect of deterrence becomes especially acute when technology is volatile. For then the truths of one year become the perils of another. Policies which were adequate at the time of their conception become obstacles to clear understanding when new conditions arise.

In particular, recent developments like the apparent Chinese test of a hypersonic missile and something that looks very much like the Fractional Orbital Bombardment System (FOBS) that the Soviets toyed with in the 1970s, don't threaten general or central deterrence between the U.S. and its near peer competitors as much as it does our extended deterrent guarantees to allies. Extended deterrence has always been a much harder case and it is not accident that most, if not all, of the Cold War crises where nuclear weapons use seemed a real possibility were crises over extended deterrent guarantees to allies in Europe, Asia or the Middle East.

Both the 2020 Guidance document and the Soofer-Costlow article address this point noting that calls for adopting a "no first use" policy or a declaration that the "sole purpose" of nuclear weapons is to deter nuclear weapons use (as opposed to conventional aggression or aggression using other kinds of weapons of mass destruction) are likely to do more harm than good. This, by the way, is precisely the same conclusion reached by a Congressionally-mandated study by an FFRD that was completed by the Institute for Defense Analysis earlier this year. That cautionary note is probably one that those who are working on the current 2022 Nuclear Posture Review would be wise to consider.

Matthew R. Costlow

Matthew R. Costlow is Senior Analyst at the National Institute for Public Policy and former Special Assistant in the DoD Office of Nuclear and Missile Defense Policy.

Introduction

The U.S. Nuclear Employment Strategy is a Congressionally-mandated Department of Defense report to Congress that details the guiding principles and any changes to U.S. nuclear employment strategy, plans, and options. The report, also known as the "491 Report" because of its place in title 10 of U.S. Code, helps keep the members of Congress informed of

U.S. nuclear strategy overall in conjunction with a number of other regular briefings and reports, such as Nuclear Posture Reviews (NPRs). The 2020 U.S. Nuclear Employment Strategy was sent to the required Congressional committees in December 2020 and was the product of many hours of writing and collaboration between OSD Policy, Joint Staff, State Department, U.S. Strategic Command, and the National Security Council. The following

discussion highlights the context and themes that I believe are the most relevant when studying the evolution of U.S. nuclear policy.

The Context and Substance of the U.S. Nuclear Employment Strategy

While there is some variation in the emphases and conclusions of the 2013 and 2020 U.S. Nuclear Employment Strategies, by law, they contain four necessary elements:

- (1) A description of the modifications to the nuclear employment strategy, plans, and options of the United States made by the strategy so issued.
- (2) An assessment of effects of such modification for the nuclear posture of the United States.
- (3) The implication of such changes on the flexibility and resilience of the strategic forces of the United States and the ability of such forces to support the goals of the United States with respect to nuclear deterrence, extended deterrence, assurance, and defense.
- (4) The extent to which such modifications include an increased reliance on conventional or non-nuclear strike capabilities or missile defenses of the United States.

It is important to remember the context internationally when the Department of Defense first responded to this Congressional mandate in 2013. The Obama administration, beginning in 2009 and into 2010, pushed for a “reset” of U.S. relations with Russia that resulted in the New START Treaty being signed in April 2010, along with the publication of the 2010 Nuclear Posture Review. The 2010 NPR was obviously influenced by the apparent improvement in relations with Russia at the time—a seemingly more moderate Russian President in Dmitry Medvedev and a China that seemed to still be “hiding its capabilities and biding its time.” Recognizing the overall improved security environment, but hedging against a downturn, the 2010 NPR and 2013 Nuclear Employment Strategy noted that although the threat of nuclear war was remote, the risk of a nuclear attack had increased.

As the 2013 Nuclear Employment Strategy states, in 2011, President Obama directed a follow-on analysis be conducted to determine how the U.S. nuclear posture (and policies) could best align with the five objectives laid out in the 2010 NPR. They were: prevent nuclear proliferation and nuclear terrorism; reduce the role of nuclear weapons in US strategy; maintain strategic deterrence and stability at reduced force levels; strengthen regional deterrence and reassure U.S. allies and partners; and, sustain a safe, secure, and effective nuclear arsenal. The Department of Defense added a sixth objective: “achieve U.S. and allied objectives if deterrence fails.”

What then were the implications of these six objectives for U.S. nuclear policy and posture? In summary, the Department of Defense strove to create the conditions under which a policy of sole purpose could be adopted. How? By reducing the role of nuclear weapons in US defense strategy, increasing the capabilities of conventional strike options, and increasing

regional missile defenses. The 2013 Nuclear Employment Strategy also stated that the United States would maintain “significant counterforce capabilities” while pursuing up to a one-third reduction in nuclear weapons below the New START Treaty levels via negotiated cuts with the Russians. Finally, the report noted that the Department of Defense sought to shift to a more responsive nuclear infrastructure over time and rely less on non-deployed warheads for hedging.

This baseline of the 2013 Nuclear Employment Strategy was a significant marker for drafting the 2020 Nuclear Employment Strategy and illustrates some important themes for those writing nuclear policy. First, threat perceptions, and prospects for cooperation, can change rapidly. As the SALT II Treaty and the Soviet invasion of Afghanistan illustrated, and later the 2014 Russian invasion of Ukraine, the threat environment is far from static—and events outside the realm of nuclear weapons can nevertheless have an effect on U.S. nuclear policy. A second important theme is that even though the security environment can change rapidly, there are some enduring U.S. interests and principles. Many of the similarities between the 2013 Nuclear Employment Strategy and the 2020 Nuclear Employment Strategy are the products of decades of debate and analysis. Changes in nuclear policy are usually evolutionary, not revolutionary—which seems on the whole to have been prudent. Third, where there are differences between the two official U.S. documents, the authors should “show their homework” and explain as much as they can why policy or force posture is changing. This can potentially go a long way toward deterring the inclusion of partisan-focused policy and encouraging sound analysis based on the threat environment and U.S. capabilities.

The Similarities between the 2013 and 2020 Nuclear Employment Strategies

Much like how the 2018 NPR and the 2010 NPR shared many similarities, so too do the 2013 and 2020 Nuclear Employment Strategies. Both emphasize the importance of modernizing the nuclear triad plus dual-capable aircraft—a critical similarity that analysts typically overlook: Presidents over the nuclear age have found the triad to be of value in times of crisis and in times of peace. Both reports also recognize there are a similar set of roles for nuclear weapons in U.S. defense strategy, that is: deterring adversaries, assuring allies, achieving objectives should deterrence fail, and hedging against an uncertain future. In addition, both reports note that an essential aspect of a credible deterrent is having plans for when nuclear weapons may need to be employed and to recognize there are a “range” of such scenarios—from limited use all the way up to general nuclear war. Preparing for the possibility of

nuclear employment has two general advantages: first, preparing for the possibility of nuclear employment contributes to deterrence—as Herman Kahn said, “the best way to look willing is to be willing.” Second, preparing for the possibility of nuclear employment can contribute to limiting damage should deterrence fail.

To deter such an event, both reports note the importance of adaptability in the U.S. nuclear force structure, and especially the ability of uploading additional warheads as a hedge (and eventually moving toward a responsive infrastructure). One can see the wisdom in this especially after these public revelations about China's large nuclear buildup. A partial upload of additional U.S. warheads could be a legitimate option in some cases in the future, especially before new U.S. delivery systems obtain their initial operational capability. Importantly, should a crisis develop into a conflict, neither the 2013 or 2020 reports express confidence that escalation can or will be controlled. Nevertheless, it would be imprudent not to try. Both reports reject a "minimum deterrence" approach to nuclear targeting—i.e. "city busting"—and instead state clearly that all nuclear employment plans adhere to the laws of armed conflict. Finally, both reports emphasize the importance of extended deterrence and note how critical a modernized U.S. nuclear arsenal is for this goal.

Differences between the 2013 and 2020 Nuclear Employment Strategies

Most of the differences between the 2013 and 2020 reports stem not from partisanship or ideology, but rather from fundamental changes in the security environment. To be blunt, the world in 2013 looked much different than the world in 2020, so the United States had to adapt its strategy accordingly. According to the 2010 NPR and 2013 Nuclear Employment Strategy, the top two most pressing threats were nuclear proliferation and nuclear terrorism. While these threats remain, the 2020 report elevated the risk of a Russian or Chinese limited nuclear employment into the top tier of threats. Crucially, the Russian and Chinese nuclear threats appear to be mid- to long-term challenges—again indicating the importance of U.S. nuclear forces' adaptability.

While the 2013 Nuclear Employment Strategy called for reducing to 1,000 deployed strategic warheads, ideally in concert with Russia, the 2020 report omits that recommendation and instead recommends explicitly against any unilateral nuclear reductions. Such reductions would negatively affect deterrence and assurance while doing nothing to halt the Russian and Chinese nuclear advances. Also, the 2013 report seeks to create the conditions for a sole purpose policy (while at the time choosing not to adopt one at present) while the 2020 report states that such a policy—or No First Use—would be ill advised.

After Nuclear Employment

The 2020 Nuclear Employment Strategy states that the most likely scenario where a nuclear weapon will be employed is an adversary's attempted escalation out of a failed conventional conflict, but given the unpredictable nature of escalation, larger and more destructive scenarios cannot be ruled out. Thus, the report explains U.S. policy: "Should deterrence fail, the United States will strive to end any conflict at the lowest level of damage possible and on the best achievable terms for the United States, allies, and partners." This goal then leads to a focus on providing a "graduated set of response options" for the whole range of possible nuclear scenarios. In case of a limited nuclear attack, an adversary can count on a U.S.

response, but cannot be sure of the timing, intensity, or target of the response. U.S. leaders are likely to seek a response that signals both resolve and restraint. The supplemental capabilities explained in the 2018 NPR—the low yield W76-2 submarine launched ballistic missile warhead and the nuclear-armed sea-launched cruise missile (SLCM-N)—are examples of how a flexible U.S. nuclear force helps close potential “gaps” between what the adversary perceives U.S. will do, and the U.S. ability to achieve its goals.

Having larger response options, beyond those that could be used in a more limited response scenario, helps reinforce the point in the mind of the adversary that should he choose escalation beyond limited employment, there will be no scenario in which he could achieve his political objectives. The 2020 Nuclear Employment Strategy states in this regard, “Should a crisis escalate into a large-scale nuclear attack on the United States or its allies or partners, the United States retains the option to pursue multiple objectives, from preventing further nuclear employment to inflicting intolerable costs on the adversary.” This is, in a sense, the final backdrop to any limited nuclear employment. The opponent must know that even if he plans a “perfect” attack and catches the United States at its worst moment, the United States will still have the ability to inflict unacceptable damage so as to make any attempt ultimately unprofitable.

Conclusion

I am encouraged that the past five Secretaries of Defense, going back to the early Obama administration, have said that nuclear deterrence and nuclear modernization are the number one missions or priorities of the Department of Defense. The 2013 and 2020 Nuclear Employment Strategies reflect this continued tradition of bipartisanship—a tradition built on decades of debate and study of issues that are, quite literally, on the highest of stakes. The security environment for the next Nuclear Employment Strategy—if the past two are any indication—will be different from the 2020 report, but the historic U.S. missions are likely to remain. The Department of Defense must do its part through reports such as these to continuously inform both Congress and the American people. They should know the considered approach, and reasons behind, how U.S. officials think about the unthinkable: nuclear employment.

Robert M. Soofer

Robert M. Soofer is former Deputy Assistant Secretary of Defense for Nuclear and Missile Defense Policy.

This unclassified report is unprecedented among nuclear powers and provides significant detail on how and under what conditions the United States would consider the use of nuclear weapons. The report was driven by the United States Congress, whose original legislation

requiring the report dates to the early days of the Obama Administration when some in the House and Senate Armed Services Committee were apprehensive about potential changes to US nuclear strategy and employment policy. There was concern that the administration might adopt a minimum deterrence posture to facilitate significant reductions in US nuclear forces consistent with President Obama's vision of an eventual world without nuclear weapons. That concern, it turns out, was misplaced. Nevertheless, Congressional attention on nuclear matters is, on balance, a good thing, as witnessed by the long-standing bipartisan consensus on nuclear modernization.

The report is helpful in important respects

NATO Secretary General Stoltenberg has said that "deterrence starts with resolve; you can't just feel it, you have to show it." This report contributes to measures undertaken to "show" resolve, along with NATO communiqués, nuclear related exercises, nuclear burden sharing, and the modernization of US/NATO nuclear forces.

Employment guidance, like other aspects of US declaratory nuclear policy, is meant to convey to adversary and ally alike the circumstances under which the US would employ nuclear weapons, how it might employ said weapons, and to what purposes. The guidance is meant to strengthen the credibility of deterrence threats, and in so doing, reassure allies that the United States is willing and capable of using nuclear weapons on their behalf in extreme circumstances—that the United States is willing to run risks on their behalf.

It is also a message to potential adversaries that while deterrence is our most important objective, we have also thought through the scenarios should nuclear deterrence fail. By demonstrating that the United States is prepared to use nuclear weapons under a broad range of circumstances, the United States makes it less likely that challengers will tempt fate or run nuclear risks.

The report is meant to convey the following messages to potential adversaries, allies, and the American people by way of the United States Congress:

For potential adversaries (principally Russia and China)

Potential opponents must understand that the United States has the resolve and capabilities to counter any adversary nuclear use. There is no scenario for nuclear use to which the President cannot or would not respond. To this end, the President is provided limited, graduated response options so that the President is not left with the choice of either responding massively against adversary cities (which would be tantamount to national suicide) or doing nothing. The enemy should understand that the United States maintains a range of delivery systems with different yield warheads and that those systems are SURVIVABLE against an enemy surprise attack. This survivability avoids the need for the United States to consider nuclear preemption during a crisis, thus ensuring crisis stability.

The report makes clear that while deterrence is the first objective, the U.S. leadership thinks seriously about nuclear use should deterrence fail and that it can adaptively plan based on the circumstance.

The report also explains U.S. nuclear strategy in some detail. Contrary to notions of targeting populations based on “mutual assured destruction,” U.S. nuclear strategy is meant to limit escalation and restore deterrence at the lowest possible level. In this way, we hope to disabuse an adversary of whatever notion it was that gave them confidence in using nuclear weapons in the first place—and that pursuing further nuclear use will leave them very much worse off.

We don’t know if nuclear war can be limited—in fact, the risk of uncontrollable escalation enhances deterrence. Yet it would be imprudent not to plan for limited use because massive retaliatory attacks in response to limited adversary nuclear use lack credibility and, if executed, would lead to the worst possible outcomes. By conveying to potential opponents our intent to restore deterrence at the lowest level possible, this could enhance crisis (first strike) stability because the adversary need not fear a U.S. disarming strike. We don’t want the adversary to conclude that its only option is a full-scale attack against the United States, but that there is, perhaps, a way to limit escalation and resolve the conflict short of societal destruction.

A strategy of limited use (to restore deterrence) requires the U.S. to identify targets to strike that can demonstrate resolve while also showing restraint—and how to communicate that restraint to the adversary under stressful conditions.

For Allies

The report should reassure U.S. allies that extended deterrence is strong, despite perennial domestic debates over reducing the role of nuclear weapons and no first use declaratory policy. We want allies to know that the U.S. thinks, plans, and exercises to use nuclear weapons on behalf of its allies, and that we are willing to run risks on their behalf. U.S. nuclear use will be tailored to the circumstances of the threat faced by our allies; we have a range of capabilities that should give an adversary pause before threatening our allies with conventional attacks or risking escalation.

Take-aways for Congress

Despite a healthy interest in nuclear matters in the U.S. Congress, nuclear deterrence theory, U.S. nuclear strategy, and nuclear employment strategy are not well understood, except by a few Members of Congress who have dedicated themselves to this complicated subject. This report should serve to raise the nuclear IQ by imparting the following key points:

The US does not have a policy or strategy of nuclear primacy or superiority. The objective of our nuclear strategy is not to win a nuclear war. Likewise, US nuclear strategy is not Mutual Assured Destruction. We do not target civilians deliberately and we do not rely on massive nuclear attacks to deter adversaries, for such threats like credibility for extended deterrence.

A nuclear strategy of tailored deterrence with flexible capabilities has been a hallmark of U.S. nuclear strategy for many decades and reflects the realities of the nuclear military balance and our extended deterrence requirements.

Flexible, graduated options are not “nuclear warfighting,” but rather help to maintain the nuclear threshold as high as possible because we eliminate from the adversary the supposed benefits from limited strikes. It is a paradox of nuclear deterrence that the best way to make sure that nuclear weapons are never used is to convince the adversary that you are, in extreme circumstances, willing to use them. An incredible nuclear threat does not deter.

Finally, we hope to convey to the Congress and the American people that the U.S. has chosen an appropriate and reasonable nuclear strategy (and supporting nuclear force structure) that considers the existing and foreseeable security environment.





LITERATURE REVIEW

Rush Doshi, *The Long Game: China's Grand Strategy to Displace American Order* (New York: Oxford University Press, 2021), 432 pp.

In a rare instance of bipartisan agreement among U.S. defense officials, the idea that a revisionist China should become the U.S. “pacing threat” has now reached something of a broad-based consensus in the field. Although many agree on the growth of the China threat, there is sizable disagreement among scholars on the question of what motivates China’s actions. Are China’s defense and foreign policies driven primarily by President Xi’s unique personality and ambitions? Is China simply reacting to its changing perceptions of the threat environment or is it proactively implementing a decades-long plan for regional, and ultimately, global hegemony? And given China’s de facto policy of secrecy, how can Western analysts know which theory is right?

Rush Doshi, now the Director for China at the National Security Council, enters this debate with his book *The Long Game*, which advances a deceptively simple thesis: Chinese leaders have unique attributes made manifest in how they rule, but they all generally act within the confines of long-established principles written in official Chinese Communist Party (CCP) documents and speeches. In short, CCP leaders believe what they write.

Readers attuned to the possibility of CCP propaganda or misinformation will (rightly) be wary of such an approach, but Doshi adequately addresses these concerns by noting that analysts should not place blind trust in CCP documents. Rather, what makes these CCP documents worth considering is both who made them and whether Chinese foreign policy tracks with what is stated. That is, if Chinese action matches the actions proposed in the documents, then the documents gain credibility as authoritative sources for Chinese thinking. Doshi also helpfully provides an appendix that clearly states his hierarchy of trustworthiness for Chinese-language sources.

The main research focus of *The Long Game* is on three periods in modern Chinese history that roughly correlate with changes in China’s general approach to foreign policy: 1989-2008 (the stage when China pursues a strategy of “blunting” U.S. power in Asia), 2009-2016 (the stage when China builds its power relative to the United States), and 2017 to the present and beyond (the stage where China expands its power and presence globally to displace the United States as the world’s superpower). Each section examines the domestic and foreign imperatives behind Chinese foreign policy – especially relating to the United States – for each era and documents a number of illustrative examples.

For instance, Doshi explains the relatively rapid deterioration in U.S.-Chinese relations from 1989-1991 through the lens of three major events: the Tiananmen Square Massacre, the Gulf War, and the dissolution of the Soviet Union. Each event dramatically altered China’s threat perceptions and immediately lead to changes in the way CCP leaders began discussing and writing about the United States. According to CCP leaders, even the most mild criticism from U.S. leaders about China’s bloody deeds in Tiananmen Square was evidence that the United States sought regime change in China. Even while successive U.S. presidents in the 1990s and 2000s welcomed a growing and prosperous China to the world economy, CCP



leaders saw a subversive U.S. strategy of “peaceful evolution” that would remove the Party’s control over the economy and Chinese citizens.

These persistent misperceptions in the U.S.-China relationship causes Doshi to be skeptical of the value of Western accommodationist efforts towards China. In essence, the United States cannot assure a China that does not want to, or cannot, be assured. As Doshi demonstrates, if China has a deep-seated grand strategy – built and reinforced since the time of Mao – to displace the United States first in Asia and then the world, then the United States must not continue from the assumption that it can change China’s intentions if it only finds the right combination of words and actions to demonstrate good intent.

Instead, Doshi calls for the United States to adopt asymmetric military means to counter China’s regional ambitions in the first island chain, mainly: anti-ship cruise missiles, long-range precision strike, mine warfare, and large-payload submarines. He also calls for re-invigorated U.S. efforts to push back on unfair or illegal Chinese practices in trade institutions. Interestingly, Doshi notes that exposing the corrupt ties between officials in China and other states where China is seeking to build facilities has limited those kind of projects in the past and could be a low cost way of frustrating some of China’s economic and political ambitions.

The Long Game is not without its flaws, but they are not fatal to the book’s thesis. For instance, Doshi writes at length about how China has co-opted or disabled a number of international economic institutions – which, while true, perhaps overstates the importance of some of the institutions for affecting state policies. More substantially, *The Long Game* demonstrates convincingly that China does indeed have a grand strategy that incorporates all the tools of state power to advance its aim of displacing the United States – but on what foundation is China building this grand strategy? That is, Doshi focuses heavily on China’s foreign and military strategies, but only lightly touches on the domestic base that provides the power to these strategies. Domestic political control is obviously central to the CCP’s grand strategy, but this relationship is left unexplored.

On a final note, although *The Long Game* was written and published just before the open-source revelations about China’s massive nuclear buildup, Doshi’s methodology could have fairly easily predicted it – making this work all the more credible. China’s nuclear history, with long periods of minimal growth in capabilities and numbers and then a sudden explosion of activity, finds a parallel in Doshi’s recounting of China’s acquisition of its first aircraft carrier. After creating a false cover story for its purchase, China towed the aging aircraft carrier from Ukraine all the way to China where it sat idle for years – with only minimal maintenance to keep it afloat. Then all of the sudden, when China decided it was time to stop hiding its capabilities and biding its time, it chose to modernize the old aircraft carrier, and indigenously produce three more in rapid succession. Nuclear experts and China watchers have been pondering the reason behind China’s rapid nuclear buildup, but Doshi’s logic provides a credible explanation: CCP leaders made a political decision that the era of “hide and bide” has passed, and expanded Chinese military capabilities will allow expanded – even global – Chinese political ambitions.

The Long Game makes a valuable contribution to the field by interpreting the often-impenetrable official CCP jargon and revealing China's grand strategy on a global scale – a fact that U.S. policymakers would do well recognize quickly and act upon accordingly.

*Reviewed by Matthew R. Costlow
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Dmitry Adamsky, *Russian Nuclear Orthodoxy: Religion, Politics, and Strategy* (Palo Alto, CA: Stanford University Press, 2019), 255 pp.

In his excellent work, Dmitry Adamsky traces the increasing role of Russia's Orthodox church in Russia's nuclear weapons complex and offers an insight into an area usually ignored by experts on Russia's nuclear doctrine and strategy. His contribution to the field is as innovative as it is invaluable.

After the Soviet Communists' attempt to uproot religion from Russian lives, the end of the Cold War presented an opportunity for the Russian Orthodox Church (ROC) to obtain its pre-Soviet standing within Russian society. In this initially very difficult effort, the ROC obtained an unlikely supporter in Russia's nuclear weapons complex, demoralized and on the brink of a collapse in the mid-1990s. Adamsky distinguishes among three distinct parts in the process of the ROC's resurrection within the Russian military: the Genesis Decade (1991-2000); the Conversion Decade (2000-2010); and the Operationalization Decade (2010-2020). Each of them explores state-church relations, the nexus between faith and nuclear weapons, and strategic mythmaking. This approach makes it easy to follow the argument and understand it in a broader context rather than as an isolated phenomenon limited to Russia's nuclear forces.

During the Genesis Decade, the ROC positioned itself as an institution that could meet a void left by Communist ideology and provide confidence to the military, vilified by the Russians as one of the reasons for their economic woes. The process of the ROC's gaining increasing importance within the military started at the grass-roots level. The cooperation and clerical interest were deepest and most significant within the nuclear corps and nuclear industry. Both suffered massive problems related to brain drain, lack of funding, and dealt with a loss of status within Russian society. The ROC decided early on to affirm the importance of Russia's nuclear weapons not only to Russia's security, but also to keeping Russia's Orthodox character. The ROC shielded the nuclear complex from "political-social ostracism, lobbied for funding, supported it in overcoming value disorientation and a miserable social attitude, helped it to reinvent its self-identity, and injected new meaning into its professional life."

The ROC became more involved in foreign policy and national security issues during the Conversion Decade. It managed to obtain political support and became indispensable to

fostering national ideology promulgated by then-new President Vladimir Putin. As the author states, “nuclear weapons and Orthodoxy became major aspects of Russia’s greatness, both internally and externally.” As the nuclear complex recovered, it did not forget the ROC’s advocacy in the 1990s. Orthodox priests became more active and more embedded in day-to-day activities of Russia’s nuclear forces. Nuclear platforms were consecrated and renamed after Orthodox saints. President Putin renewed the institution of military clerics in 2009. The Russian nuclear Orthodoxy matured, with two dicta at its core: “to stay Orthodox, Russia should be a strong nuclear power,” and “to stay a strong nuclear power, Russia should be Orthodox.”

The Operationalization Decade saw further deepening of trends that started in the previous decade. Even as Russia’s foreign policy became more belligerent, the ROC continued to provide its support and blessing. The opposition to the West and its purported spiritual degradation became some of the leitmotifs of the Putin regime and were endorsed by the ROC. Patriotism and Orthodox faith became intertwined in the regime’s ideology and a part of the military ethos. Priests became involved in operational activities of Russia’s nuclear forces, including going on nuclear submarines and being embedded in operations abroad.

Besides highlighting an aspect of Russia’s nuclear forces that barely anyone paid attention to within the U.S. strategic community, Adamsky’s work is well executed from a technical standpoint. He relies on a variety of primary resources and in-person interviews. He marries all the rich data with his in-depth knowledge of nuclear deterrence and Russia’s strategic culture to produce a book that will become a standard for researchers exploring the nexus of national security and religion. And just like any truly valuable scholarly work, Adamsky’s book raises almost as many questions as it answers, in part because the story of the ROC’s influence within the Russian nuclear weapons complex continues to be written. What do these trends mean for deterrence? Do they translate into new opportunities to exploit a potential rivalry between Russian government structures and the ROC? What is the extent of the clergy’s influence on nuclear operations? These and other important questions deserve further study.

*Reviewed by Michaela Dodge
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***Wars of Ideas: Theology, Interpretation and Power in the Muslim World*, edited by Ilan Berman (Lanham, MD: Rowman & Littlefield, 2020), 163 pp.**

Although the 20-year U.S. military involvement in Afghanistan has now ended, the threat to U.S. and Western civilization posed by radical Islamic extremism—exemplified most vividly by the horrific terrorist attacks of September 11, 2001—has not. While the United States turns its attention to dealing with great power competitors like China and Russia, no one

should believe that the United States is now forever safe from those whose fundamentalist ideologies preach hatred against Western values and the principles for which the United States stands.

The nature of the ongoing struggle between Western values and the forces of religious intolerance represented by the global jihadist movement is the subject of Ilan Berman's new book, *Wars of Ideas: Theology, Interpretation and Power in the Muslim World*. The collection of essays by contributors sheds important light not only on the nature of this ongoing theological and ideological competition but provides a blueprint for countering the dangerous beliefs of its most fanatical adherents.

As Berman notes, despite the fact that "successive U.S. administrations have struggled to craft a cogent strategy" to counter the insidious pull of an ideology that is antithetical to the principles of freedom and democracy that are the hallmark of Western civilization, "the United States has stopped short of articulating the means and methods by which it might be possible to undermine and dilute that 'totalitarian vision'." Therefore, he argues that the United States "finds itself at an inherent disadvantage" in the war of ideas, "without standing to weigh in authoritatively on Islamic thought and ideology."

Berman, however, suggests a plausible way forward. He notes that "moderate nations" in the Muslim world have experience countering the radical narrative of jihadists and that the United States should work with them to learn their approaches and empower them as appropriate to help create a "potential antidote to the message and vision of today's Islamic radicals."

The experience of other Muslim countries is described in detail by various expert contributors to the book, who explain the evolution of Islamic radicalism and how it is being addressed in societies as diverse as Morocco, Indonesia, Jordan, the United Arab Emirates (UAE), and Saudi Arabia. For example, Moroccan authorities have focused on broad-based political, security, socio-economic, and religious reforms as part of their efforts to counter violent Islamic extremism. In Indonesia, the outreach efforts of unofficial Muslim organizations, working in concert with government authorities, have helped dampen the attractiveness of radical and extremist elements within the Muslim community. And in the UAE, the government has utilized a "soft power" approach, relying on public diplomacy, preaching political and religious tolerance, engaging in international outreach, and investing in various activities that promote moderate and tolerant forms of Islam.

Although the 2017 *National Security Strategy of the United States of America* and the 2018 *National Defense Strategy* both correctly highlighted the reemergence of great power competition, the implementation of these strategies has occasionally been portrayed as a binary "either/or" choice, often described as a "pivot": in other words, the United States can focus its efforts on the counterterrorism mission or on deterring potential aggression from great power competitors.

The ignominious U.S. withdrawal from Afghanistan is the poster child that has come to symbolize the transition away from the primacy of counterterrorism that has characterized the last two decades of American defense planning toward countering the growing foreign

policy assertiveness and military aggressiveness of China and Russia. Yet, Islamic extremism remains a potent threat, regardless of how much attention U.S. policy makers devote to it. Consequently, failing to construct a successful strategy to counter it would be a grave mistake. As Berman points out, “the U.S. counterterrorism mission is today increasingly at risk of being crowded out by other priorities,” noting that “Islamic extremism still poses a resilient, multifaceted threat—both to the United States and to its allies and international partners.” His advice to U.S. policy makers is sound: the United States must “learn from nations now on the front lines of this war of ideas,” and “engage, assist and empower those countries” to ensure success.

As Berman correctly concludes:

The Muslim World, after all, is hardly a monolith. Throughout the Middle East, Africa and Asia, one can find numerous examples of interpretations of Islam that are fundamentally different from the intolerant, exclusionary creed embraced and promulgated by the likes of al-Qaeda and the Islamic State. Amplifying those ideas and traditions—and diminishing those of Islamic extremists—is essential to reshaping the contours of the struggle now taking place within the Muslim faith.

Wars of Ideas is a must-read for anyone wishing to understand the enduring threat to Western civilization posed by Islamic extremism and how various Muslim states have sought to marginalize it. Berman has adroitly orchestrated a collection of scholarly essays—bookended with his own expert analysis—that dissects the historical, philosophical, cultural, and ideological underpinnings of the global jihadist movement with remarkable clarity. It is refreshingly substantive, analytically rigorous, and highly informative, avoiding the sweeping generalities that often masquerade as strategic insight. Berman’s book is also a warning to policy makers that the United States has yet to craft a counterterrorism strategy that effectively negates the menacing ideology of the global jihadist movement—as well as a call to work collaboratively with moderate Muslim states in this endeavor. Those responsible for American national security should take heed.

*Reviewed by David J. Trachtenberg
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DOCUMENTATION

Document No. 1. Brad Roberts, “China and the 2021 US Nuclear Posture Review,” Testimony Before the U.S.-China Economic and Security Review Commission, June 10, 2021.

Secretary of Defense Lloyd Austin’s February 2021 designation of China as the “pacing threat” invites important questions about how US nuclear policy and posture might have to adapt. These questions are given added salience by recent revelations about the accelerating growth of China’s nuclear arsenal. What impact should China’s nuclear policy and posture, and their modernization, have on US nuclear policy, deterrence strategy, and force planning?

To frame brief answers to these questions, my remarks will survey key issues in the Nuclear Posture Review (NPR) process, now just getting started by the Biden administration. But some context is needed to inform that survey, as provided here with three brief observations about the past, present, and future.

Setting the Context

First, since the end of the Cold War, there has been a great deal of continuity in US nuclear policy toward China. That continuity reflected some shared judgments across the Clinton, Bush, and Obama administrations. Some of these carried into the Trump administration; some did not. To be sure, there were some other important discontinuities through this period. With some over-simplification, the shared judgments were that:

- the US-China relationship was not fundamentally adversarial and thus the two could benefit by putting their nuclear focus on strategic stability rather than deterrence
- significant problems in the strategic military relationship sat somewhere in the future, not in the present
- China’s nuclear modernization was troubling largely for China’s lack of transparency and uncertainty about its end-goal and not because new capabilities were reaching the field
- the two could keep nuclear weapons in the background of the political relationship and thereby avoid having to contend with them as an irritant in the political relationship, in contrast to the US-Russian relationship
- toward that end, high-level, substantive, and sustained dialogue focused on nuclear issues and/or strategic stability would be of interest and benefit to both sides
- the US and Russia could take another modest step or two in reducing nuclear arsenals without worrying too much about a Chinese “sprint to parity”
- the extended nuclear deterrent in Northeast Asia could be shaped with an eye primarily on deterring North Korea and assuring South Korea and Japan

All four administrations also praised the virtues of “tailored deterrence,” meaning they rejected the idea that “one size fits all” in a world in which multiple potential adversaries must be deterred. During this period, policymakers hedged against a potential military



flashpoint over Taiwan and determined that the US should be ready to deter China in crisis and to attempt to restore deterrence if it were to fail.

Conspicuously today, few experts in the defense community adhere to these long-standing tenets. We stand at a potentially major turning point in US nuclear policy. The political and military relationships have shifted onto a new ground that is much more competitive and confrontational, at the same time that new information is emerging about China's modernization of its nuclear forces.

Second, China is not today the "pacing threat" for the U.S. nuclear posture—Russia is. Russia's nuclear force is significantly larger than China's. It is also significantly more diverse in the types of weapons and delivery systems it includes. Russia's nuclear weapons complex has a unique capacity for large-scale output. Moreover, Russia has gone much further than China in integrating nuclear weapons into all of its general-purpose military forces and has a capacity far superior to China's to dominate nuclear escalation at all levels of war. For decades the US has committed to maintain a nuclear deterrent that is "second to none." China's force does not drive that requirement the way Russia's does. With time, China's growing forces may change this calculus.

Third, China is not only modernizing its nuclear forces, it is diversifying them and increasing their numbers. Its envisioned end-state is unclear; perhaps it doesn't have one. In our thinking about China's nuclear future, it is important to clearly distinguish what we know from what we don't know. We know that China will be more capable, with a modern triad, modern warheads, and modern command and control. We know that China will be more competitive, with a modern design and production infrastructure for both warheads and delivery systems. We also know that it will be more confident in its ability to accept military risk. What we don't know is whether a more capable, competitive, and confident China will also be more assertive and aggressive. China's assertiveness in its maritime environs and use of force in "gray zone" strategies to try to settle territorial claims, in combination with its economic coercion of its trading and financial partners are troubling indicators of what may lie ahead.

We also know that China is building up its nuclear force; but we don't know whether the strategic balance with the United States will shift, as that depends in part on what the United States does in response. We know that China's no-first-use policy has been under pressure of various kinds; we don't know whether the traditions of nuclear minimalism will be overtaken by contemporary concerns. We don't know what President Xi meant when in 2016 he promised "a great rise in strategic capabilities" and in 2017 "breakthroughs...in strategic deterrence capability." Nor do we know what he meant when in 2020 he promised that by 2049 China would become "a leader in terms of composite national strength and national influence...at the center of the world stage" where it will have "the dominant position."

We can make many predictions about China's nuclear future but we must also recognize that the future is littered with uncertainties. We must also recognize the possibility that the United States may have little or no influence over the next choices China might make about its strategic future. The Biden administration's review of defense strategy, and the associated integrated strategic review, will have to frame responses to these "knowns" and "unknowns" and to the general challenges of coping with uncertainties.

China in US Nuclear Policy

China in US nuclear declaratory policy. Each new president publicly declares the conditions under which he or she might consider employing nuclear weapons. Over the decades, there have been very few changes in first principles. But President Biden has introduced the possibility of one, which will be considered in the review process. Every prior president of the nuclear era has declared that the fundamental purpose of US nuclear weapons is to deter nuclear attack on the US or its allies. No president has been willing to take the extra step to declare that this is the sole purpose. In the case of President Obama, for example, he judged that there was a narrow range of plausible contingencies in which the vital interests of an ally or even the US could be put in jeopardy by non-nuclear means. So he rejected "sole purpose" while vowing to work to create the conditions that would enable it to be safely adopted at a future time. On the campaign trail, Joe Biden expressed his support for "sole purpose," stating that, "as president, I will work to put that belief into practice, in consultation with the US military and US allies."

China will not be the key driver of this decision. But it would welcome such a declaration, given its own no-first-use declaratory policy and its long-standing advocacy that the US adopt "no-first-use." ["Sole purpose" and "no first use" are similar but not identical promises of nuclear restraint; the differences vary with specific definitions.]. Such a declaration would be unlikely, however, to result in significant changes to China's nuclear policy or posture. While China would welcome such a US declaration, Japan would not. Its leaders believe that its vital interests can be put at risk by non-nuclear means; they strongly hope that the country that defends it (the US) will not foreswear its most powerful tool for contending with that threat. Japan, South Korea, and Australia are all anxious on this score as the balance of conventional forces in the region shifts in China's favor, thereby weakening the preferred strategy of deterrence by denial (that is, by having the means to prevent its military success).

China will factor in the US debate about "sole purpose" in at least one other respect. There will be a debate about whether such an unverifiable declaration would be accepted by others as credible—that is, as likely to be true in time of crisis and war. The credibility of such declarations is called into question by the fact that the Soviet Union long maintained a "no-first-use" policy publicly while in secret it planned and prepared for first use. Skepticism will be reinforced by the perception of many that China's rapid expansion of its force, and development of certain capabilities that make sense primarily if used first, signals that it

retains its declaratory policy for public messaging but not as a guide to actual military plans and preparations.

China in the Biden administration's "strategy to put diplomacy first." The new administration's commitment to "elevate diplomacy as our tool of first resort" will be reflected in an ambitious agenda of nuclear diplomacy encompassing arms control and nonproliferation. In this context, the administration has repeated the calls of its predecessors for China to join it in a dialogue about strategic stability and in the arms control process. The NPR will have to account for the fact that China has rejected such calls for decades. As its response to Trump diplomacy makes clear, it is unwilling to be coerced to the table. If the Biden administration is to be successful in engaging China in substantive, sustained, high-level dialogue, it must find arguments that persuade China rather than simply pressure it. Repeating standard US calls for Chinese transparency and restraint will do little to advance meaningful diplomacy.

China in US assurance strategy. NPRs also generally offer assurances of various kinds, including to US allies of its resolve to defend them, to nonproliferation partners of its commitment to the NPT, and to Russia and China of conditional strategic restraint. Prior administrations have assured China that US homeland missile defense "is not aimed at China;" none has been particularly troubled that China rejects these assurances as not credible. Moreover, China has regularly sought an assurance it has never received: that the US accepts mutual vulnerability as the basis of the strategic military relationship. The US has not contested mutual vulnerability and thus the condition exists de facto. But that is not the same thing as making a political statement. Prior administrations have refrained from accepting the condition as a political fact for multiple reasons, including the concern that it would be read in Beijing and Tokyo as appeasement. The 2021 NPR will have to consider whether or not to offer such an assurance. It may be that such a clarification would be reassuring to China and slow its pace of nuclear modernization. Or it may be that such a clarification would be irrelevant in China's calculus. Or it may be that it would be seen as a temporary development in US nuclear policy, given the decades of US ambivalence about answering the question—essentially "too little and too late."

China in US Deterrence Strategy

China and the commitment to take steps to reduce the role of US nuclear weapons. The Biden administration has clearly articulated this commitment but has not specified which steps it might or when it might take them. It hopes that by taking steps it will provide leadership by example, thereby encouraging others to do the same. Its NPR is highly likely to call on China to do the same. But China rebuffed similar efforts by the Obama and Trump administrations. China also made it clear that it was unwilling to follow the United States in seeking to substitute non-nuclear means for nuclear means to reduce the number of nuclear weapons. Little can be gained for the US by simply repeating the calls of prior administration. Given its ongoing nuclear modernization, China is likely to be an obstruction to the Biden administration's effort to further reduce the role of US nuclear weapons.

China in tailored deterrence. NPRs also generate presidential guidance on how to operationalize deterrence. As a factor in US deterrence planning, China is changing as it becomes more capable. China is well along in becoming a nuclear peer to the United States—in qualitative, not quantitative terms, with its completion of a nuclear triad, development of a theater-range force and early warning system, integration of non-nuclear strike and defensive capabilities, and development of conventional power projection capabilities for potentially escalatory conflicts. It is also well along in becoming a multi-domain peer to the United States—with significant new cyber, spacer, and counter-space capabilities. Its theater deterrence and defense posture is also robust and still rapidly improving. As a quasi-peer, it puts new demands on US deterrence strategy. The 2021 NPR will have to identify those demands and tailor responses. The simultaneous deterrence of Russia, China, and North Korea will demand more planning capacity at US Strategic Command and close collaboration between STRATCOM and the relevant regional combatant commands.

China and US Force Planning

China and the US 'second to none' strategy. As noted above, the US has long maintained a “second to none” approach to sizing its nuclear force, as a signal that it will neither allow itself to slip into an inferior strategic position nor compete to try to gain superiority. [Note that this applies to its strategic forces, not the non-strategic forces in Europe, where Russian forces outnumber US forces by a ratio of approximately an order of magnitude.] In the 2021 NPR, the Biden administration will have to think through whether and how “second to none” fits a world in which both Russia and China are growing their nuclear forces and deepening their strategic cooperation. Numerous hard questions will have to be answered. Does a multipolar nuclear environment create new nuclear requirements for the US? Are the reductions so far made in US nuclear forces through arms control irreversible? Should future reductions be irreversible? And what might retirement of the US ICBM force imply for the desired balance with China? At the very least, it would substantially reduce the number of targets in the US that would have to be struck in an attempted preemptive strike, perhaps leading some in China to think that such a counterforce strike might be successful in crippling the US capability to respond militarily.

China and extended nuclear deterrence in Northeast Asia. Recent US administrations have explained the role of the US nuclear umbrella over Japan and South Korea in terms of the North Korean threat. As China deploys additional nuclear weapons and/or nuclear-capable delivery systems in the region, and as it projects power more widely, questions arise about the role of the umbrella vis-à-vis China. The 2021 NPR will have to consider what changes to the extended deterrent, and to strategic communications about it, are warranted by China’s nuclear modernization, if any. China will deeply oppose any explicit US statement that US weapons might be brought into the region for potential attack on China. Such a statement would also result in intensified Chinese pressure on US allies not to support that role. In this circumstance, allies would seek stronger reassurance. Moreover, the emerging North Korean nuclear threat has generated new demands for “more NATO-like” nuclear deterrence

arrangements in the region, which an administration committed to reducing nuclear roles might find difficult to pursue.

China and the nuclear hedge. Each NPR since the Cold War has reflected leadership concerns about possible sudden erosion in the security environment as well as concerns of the technical community about unwelcome surprises of a technical kind, whether in an aging US nuclear weapon or in an enemy's secret toolkit. Hence each NPR has brought renewed statements of intent to ensure that the capabilities and capacity remain in the weapons design and production complex to enable timely responses to surprise. There has also been a rising focus on how to hedge against the programmatic risk in trying to precisely sequencing the rarely attempted simultaneous modernization of multiple warheads and delivery systems. But the necessary investments have proven politically challenging. The 2021 debate over the necessary nuclear hedge is likely to be intense, given both the expense and the opposition of those who believe that nuclear reductions should be irreversible and investments should not be made to enable the future production of new nuclear weapons. The open-ended expansion of China's nuclear force is likely to make it harder to argue against such investments. China's own success in developing its weapons complex and infrastructure and endowing it with the needed capabilities and capacities offers an object-lesson in focus and resolve.

China and the Integrated Strategic Review

This survey implies that all of the important questions about the impact of China's nuclear modernization on US national security will be dealt with by the NPR. That is incorrect. The nuclear issue is not separable from broader developments in China's military strategy and improving capabilities to engage in modern strategic warfare that is multi-domain and multidimensional in character. A sound answer to the China nuclear problem requires a sound answer to the integration problem.

China thinks in such broader terms. It sees the bilateral US-PRC nuclear relationship in the context of the broader relationship of the strategic military capabilities of the two countries. These include missile defenses and non-nuclear strategic strike capabilities and perhaps also the associated enabling capabilities in cyber space and outer space. Especially from China's perspective, the credibility of its threat to retaliate by nuclear means if attacked by the United States is undermined by the US deployment of long-range precision non-nuclear strike capabilities, other so-called "left of launch" capabilities, and homeland missile defenses. China's military planners fear that these capabilities may be used in combination to preemptively eliminate China's assured retaliation posture. They fear also that the simple presence of these US capabilities might embolden the US to try to coerce China. Having struggled with this problem since at least the early 1990s, China's military planners long ago recognized the need to integrate the strategic military toolkit for deterrence and defense purposes.

Today, the United States is playing catch up, conceptually and organizationally. From 9/11 to 2014 or so, its military focus was elsewhere. Catching up requires more complete and effective integration of multi-domain operations. This requires getting operational concepts right. At present, they are not. As the bipartisan National Defense Strategy Commission concluded in its 2018 report, the US military “could well lose” a war against China or Russia because it has not so far developed the concepts necessary to successfully counter an adversary’s escalation strategies, nuclear and otherwise. Accordingly, the Biden administration’s review of nuclear policy and posture is being conducted in the context of a broader “integrated strategic review.” The aim is to produce an updated defense strategy that fully integrates strategic and nonstrategic dimensions of war as well as nuclear and non-nuclear aspects.

That integrated review will also likely involve decisions about the further development and deployment of homeland missile defenses and of long-range, precision, prompt, non-nuclear strike capabilities (as well as space and counter-space capabilities as well as cyber and infrastructure resilience). The last administration set a “simple goal” for missile defense: “to destroy any missile launched against the US, anywhere, anytime, anyplace.” Its pursuit of hypersonic strike capabilities was driven by a vision of “over-matching” strategic forces. The Biden administration will have to chart its own course. It is likely to reject these goals. But the alternatives are not as clear as they once were, when the threats were less sophisticated and numerous and the technical choices fewer. China can be expected to compete to maintain confidence in its threat of assured nuclear retaliation and is well hedged against the need to do so. Whether promises of US restraint would be met with reciprocal restraint is an open question today. The prospects of successfully responding to China’s strategies for deterrence and competition are improved with a US policy and posture review process that sees the problem whole, rather than breaking it in pieces with stove-piped capability reviews.

The integrated strategic review is a good idea. It will help frame the right big China questions for US defense strategy. But as an ambitious innovation, it is likely to fall short in some respects.

Expectations should be kept modest.

What Should Congress Do?

On a bipartisan basis wherever possible, Congress should:

1. Ensure that strategic issues in the China-US military relationship receive the necessary sustained leadership focus from the Biden administration. The Congress can do so by maintaining its own focus. And by highlighting serious concerns about China’s nuclear modernization without sounding alarmist.

2. Set its expectation that:
 - a. The Biden National Defense Strategy will fully and effectively address the concerns raised in the 2018 report of the NDS Commission about the US lack of conceptual preparedness for regional wars against nuclear-armed adversaries.
 - b. The administration's integrated strategic review will produce a coherent answer that sets out the specific contributions of different deterrence capabilities (regional and strategic, offense and defense, kinetic and non-kinetic, nuclear and non-nuclear) and the approaches needed to contain the risks of strategic escalation in multi-domain warfare.
 - c. The administration's review of nuclear policy, deterrence strategy, and force planning accounts comprehensively and substantively for the China factor.
 - d. In doing so, the administration will take full account of allied views.
3. Oppose the adoption by the administration of minimum deterrence or analogous strategies. These are strategies built on the premises that nuclear weapons are so destructive that very few weapons are needed and that the threat to employ them in retaliation is always credible.
4. Continue to support the Program of Record for nuclear modernization as formed by the Obama administration and adopted with minor modifications by the Trump administration. This includes needed investments in warheads, delivery systems, and the associated infrastructure and expertise.
5. Invest to encourage the needed intellectual bandwidth on these issues. Toward this end, task the administration to report on what institutional capacity has been created at DoD and in its support elements to ensure a steady flow of new insights about China's approach to modern conflict, including its strategic dimensions. The last administration was right to emphasize the need to out-compete, out-innovate, and out-think US adversaries. After three decades of sharp atrophy in the institutions that generate strategic thought for the US government, more needs to be done to generate the needed focus and excellence for the long term.

Brad Roberts is the director of the Center for Global Security Research at Lawrence Livermore National Laboratory. The views expressed here are his personal views and should not be attributed to the laboratory or its sponsors. Dr. Roberts served as deputy assistant secretary of defense for nuclear and missile defense policy from 2009 to 2013. In that capacity, he served as co-director of the Obama administration's Nuclear Posture Review and Ballistic Missile Defense Review. Dr. Roberts also helped found and lead a DoD-sponsored unofficial US-China nuclear deterrence dialogue that spanned nearly 20 years. Key insights from that process are discussed in his edited monograph *Taking Stock: US-China Track 1.5 Nuclear Dialogue* (CGSR Occasional Paper 2020). His most recent publication is "Orienting the 2021 Nuclear Posture Review" in the summer 2021 issue of *The Washington Quarterly*.

Document No. 2. General Glen D. VanHerck, United States Air Force, Commander, United States Northern Command and North American Aerospace Defense Command, Statement before the Senate Armed Services Committee, Subcommittee on Strategic Forces, June 9, 2021.

Chairman King, Ranking Member Fischer, and distinguished members of the Committee: Thank you for the opportunity to testify, and for allowing me the honor of representing the Soldiers, Sailors, Airmen, Marines, Guardians, Coast Guardsmen, and civilians of United States Northern Command (USNORTHCOM) and North American Aerospace Defense Command (NORAD), including the members of the Canadian Armed Forces who are a vital and essential part of the NORAD team.

Since I assumed command of USNORTHCOM and NORAD, each day has afforded me the opportunity to lead a workforce of dedicated, innovative, and resilient warfighters and public servants. That fundamental commitment to our vital missions is clearly evident as USNORTHCOM and NORAD have kept the watch and defended our nations in what is certainly the most dynamic and complex strategic environment I have encountered in my 33 years in uniform.

Our competitors continue to take increasingly aggressive steps to gain the upper hand in the military, information, economic, and diplomatic arenas. USNORTHCOM meets each of those challenges head-on—and we have done so while supporting whole-of-government efforts to safeguard our citizens through the coronavirus pandemic and historically severe hurricane and wildfire seasons, and also simultaneously synchronizing the deployment of troops to support federal law enforcement personnel on the southwest border. The cascading events of the past year placed unprecedented strain on our people, our interagency partners, and our institutions, and I am proud that we overcame each of those challenges and emerged more resilient.

That steadfast commitment is more important than ever as our competitors continue to challenge our homelands through multiple means in all domains. Defending our nations, our citizens, and our way of life requires constant vigilance, and USNORTHCOM and NORAD have demonstrated time and again that our commands remain determined, focused, and ready. But we must keep moving forward. Looking to the future, we will continue to pursue innovative capabilities and strategies to detect, deny, deter, and, if necessary, defeat potential threats posed by peer competitors, rogue nations, transnational criminal organizations, and foreign and domestic violent extremists. No matter the challenge or circumstance, this Committee should rest assured USNORTHCOM and NORAD are always on guard.

Threats

The global geostrategic environment continues to rapidly evolve. While the United States has spent the last 30 years projecting power forward to combat rogue regimes and violent extremists overseas, our competitors pursued capabilities to circumvent our legacy warning and defensive systems and hold our homeland at risk. Peer competitors like Russia and China are undermining the international rules-based order and challenging us in all domains. Further, rogue states like North Korea and Iran are also pursuing capabilities to nullify our military advantages, threaten our networks with cyber weapons, and—in the case of North Korea—develop nuclear weapons. Meanwhile, violent extremist organizations continue to devise plots to attack our citizens and our way of life.

During the Cold War, we were overwhelmingly focused on defending the United States and Canada from a single nation-state threat. After the Soviet collapse, Iraq's invasion of Kuwait, and later the attacks on September 11, 2001 we shifted our focus to non-state and rogue actors. Today, we don't have the luxury of focusing regionally or on only one threat at a time. In the last decade, we've seen a sharp resurgence in the nation-state threat as our global competitors deploy increasingly sophisticated capabilities to hold the United States and Canada at risk and limit our options in a crisis. Concurrently, the terrorist threat continues to evolve in ways that challenge our homeland defense capabilities. As a result, today's threat environment is likely the most complex we have ever faced, as potential adversaries threaten us in all domains and from all vectors.

Russia

Russia presents a persistent, proximate threat to the United States and Canada and remains the most acute challenge to our homeland defense mission. Russian leaders seek to erode our influence, assert their regional dominance, and reclaim their status as a global power through a whole-of-government strategy that includes information operations, deception, economic coercion, and the threat of military force.

In peacetime, Russian actors conduct sophisticated influence operations to fan flames of discord in the United States and undermine faith in our democratic institutions. In crisis or conflict, we should expect Russia to employ its broad range of advanced capabilities nonkinetic, conventional, and potentially nuclear—to threaten our critical infrastructure in an attempt to limit our ability to project forces and to attempt to compel de-escalation. Offensive capabilities Russia has fielded over the last several years include advanced cyber and counterspace weapons and a new generation of long-range and highly precise land-attack cruise missiles—including hypersonics. These capabilities complicate our ability to detect and defend against an inbound attack from the air, sea, and even those originating from Russian soil.

Russia also continues to modernize all three legs of its nuclear triad. In December 2019, Russia fielded the world's first two intercontinental ballistic missiles (ICBMs) equipped with a hypersonic glide vehicle payload that will challenge our ability to provide actionable warning and attack assessment. In the coming years, Russia hopes to field a series of even more advanced weapons intended to ensure its ability to deliver nuclear weapons to the United States. These include the Poseidon transoceanic nuclear torpedo and the Burevestnik nuclear-powered cruise missile, which—if perfected—could enable strikes from virtually any vector due to its extreme range and endurance.

Finally, Russia continues to conduct frequent military operations in the approaches to North America. Last year, NORAD responded to more Russian military flights off the coast of Alaska than we've seen in any year since the end of the Cold War. These Russian military operations include multiple flights of heavy bombers, anti-submarine aircraft, and intelligence collection platforms near Alaska. These efforts show both Russia's military reach and how they rehearse potential strikes on our homeland. Last summer, the Russian Navy focused its annual OCEAN SHIELD exercise on the defense of Russia's maritime approaches in the Arctic and Pacific. The multi-fleet exercise, intended in part to demonstrate Russia's ability to control access to the Arctic through the Bering Strait, included amphibious landings on the Chukotka Peninsula opposite Alaska, as well as anti-submarine patrols and anti-ship cruise missile launches from within the U.S. Exclusive Economic Zone.

China

China continues to pursue an aggressive geopolitical strategy that seeks to undermine U.S. influence around the globe and shape the international environment to its advantage. In the USNORTHCOM area of responsibility, China has made deliberate attempts to increase its economic and political influence with our close partners in Mexico and The Bahamas. While the United States remains the economic and military partner of choice in the region, China is seeking to grow its trade and investment in Mexico and, over the past few years, has invested in The Bahamas' vital tourism sector through marquee infrastructure projects. Militarily, China is rapidly advancing a modernization program that seeks to erode our military advantages and deter us from intervening in a regional conflict.

China remains among the world's most capable and brazen cyber actors, stealing volumes of sensitive data from U.S. government, military, academic, cleared defense contractors, and other commercial networks each year. In a crisis, China is postured to transition rapidly from cyber exploitation to cyber attack in an attempt to frustrate our ability to flow forces across the Pacific, and globally. China also continues to advance its counter-space capabilities that could threaten our space-based communications and sensors. In the foreseeable future, China will likely be able to augment its cyber-attack capabilities with a new family of long-range precision-strike weapons capable of targeting key logistical nodes on our West Coast that support U.S. mobilization and sustainment.

China also continues to expand and modernize its strategic nuclear forces to rival those of Russia and the United States in sophistication, if not in numbers. Over the last decade, China fielded dozens of road-mobile ICBMs and several ballistic missile submarines designed to enhance the survivability of China's nuclear deterrent and ensure its ability to retaliate following any attack. In the next decade, China will deploy a new generation of advanced weapons—some of them hypersonic—that will further diversify their nuclear strike options and potentially increase the risks associated with U.S. intervention in a contingency.

North Korea and Iran

The Kim Jong Un regime has achieved alarming success in its quest to demonstrate the capability to threaten the U.S. homeland with nuclear-armed ICBMs, believing such weapons are necessary to deter U.S. military action and ensure his regime's survival. In 2017, North Korea successfully tested a thermonuclear device—increasing the destructive potential of their strategic weapons by an order of magnitude—as well as three ICBMs capable of ranging the United States. In October 2020, North Korea unveiled a new ICBM considerably larger and presumably more capable than the systems they tested in 2017, further increasing the threat posed to our homeland. The North Korean regime has also indicated that it is no longer bound by the unilateral nuclear and ICBM testing moratorium announced in 2018, suggesting that Kim Jong Un may begin flight testing an improved ICBM design in the near future.

Iran continues to advance its military technologies and threaten the security of U.S. forces and allies throughout the Middle East. Iran adheres to a self-imposed range limit on its ballistic missile force that prevents it from directly threatening the United States. Nonetheless, Iran is developing and testing ICBM-relevant technologies through its theater missiles and space launch platforms—including its first successful orbit of a military satellite in April of 2020—that could accelerate the development of a homeland-threatening ICBM should Iran's leaders choose to pursue such a system. Iran retains the ability to conduct attacks via covert operations, terrorist proxies, and its growing cyber-attack capabilities, which it has already employed against U.S. financial institutions.

Defending the Homeland

USNORTHCOM's defense of the homeland provides the foundation for the full spectrum of the Department of Defense's worldwide missions and supports the missions of every other combatant command. The ability to deploy forces overseas, support allies, deliver humanitarian assistance, and provide presence and reassurance around the globe relies on our ability to safeguard our citizens, as well as national critical infrastructure, transportation nodes, and leadership. As competitors field highly advanced and agile long-range weapons systems and seek to act on growing territorial ambitions, we are adapting our thinking, evolving our own capabilities, and enhancing our operations and exercises to accurately reflect a changing world while remaining a relevant force.

The United States has long relied on our nuclear arsenal to serve as the strategic deterrent against an attack on our homeland. In today's threat environment, strategic deterrence remains foundational to our national defense. A safe, secure, and effective nuclear force remains the most credible combination of capabilities to deter strategic attack and execute our national strategy. The U.S. strategic deterrent has helped to maintain a careful balance between nuclear powers and remains the bedrock of our national defense, as the longstanding doctrine of deterrence by punishment makes clear to potential adversaries that a large-scale attack on the United States or our allies would result in an overwhelming and devastating response.

However, over the last decade, our competitors have adapted new techniques and fielded advanced weapons systems with the potential to threaten the homeland below the nuclear threshold. Simply stated, the missiles and delivery platforms now in the hands of our competitors present a significant challenge to our legacy warning and assessment systems and defensive capabilities. Advanced systems posing threats to the homeland have already been fielded in large numbers, and our defensive capabilities have not kept pace with the threat. The notion that the homeland is not a sanctuary has been true for some time, and that will remain the case for the foreseeable future. Therefore, we must ensure effective nuclear and conventional deterrents are in place to defend the homeland and ensure our ability to project power where and when it is needed.

Highly advanced cruise missiles, hypersonic missiles, and stealthy delivery platforms provide our competitors with the ability to hold targets in the homeland at risk with conventional weapons. That fact has led us to emphasize improved all-domain awareness and the development of a layered sensing grid to provide warfighters and decision makers at the strategic, operational, and tactical levels with increased awareness and decision space.

The reality of a vulnerable homeland and the risks associated with rising global competition are driving our commands to collaborate with interagency and industry partners to find and deliver smarter, more affordable technology. To outpace our competitors, we cannot be satisfied with incremental steps; instead, we must continue to increase the pace and tempo of our technological advancements. This work is essential, and we are proud of our close collaboration with a host of interagency and industry partners and international allies as we work together to outthink our competition, outpace threats, and defend what we hold most dear. That global focus and cooperation is also reflected in our growing wargaming capacity, including major homeland defense exercises such as VIGILANT SHIELD and our participation in the Large Scale Global Exercise series.

The Path to Decision Superiority

I believe our future success in USNORTHCOM, our fellow U.S. combatant commands, and NORAD requires **all-domain awareness, information dominance, and decision superiority**. Our competitors have invested heavily in weapons systems that can be

launched against distant targets with little to no warning, as well as stealthy delivery platforms specifically designed to evade detection by existing sensors. As a result, the successful execution of USNORTHCOM and NORAD missions in the digital age relies on significantly improving global **all-domain awareness** through the development of a fused ecosystem of networked sensors extending from space to the seafloor.

This network will pull data from an array of repurposed systems, legacy sensors enhanced through low-cost software modifications, and a limited number of new sensors to provide robust indications and warning and persistent tracking of the full spectrum of potential threats to the homeland from the seafloor to on orbit. Integrating and sharing data from this global sensor network into common platforms will allow leaders to observe potential adversaries' actions earlier in the decision cycle, providing more time and decision space at all levels.

That decision space is where the true value of improved domain awareness resides.

Harnessing the capability of distributed multi-domain sensors, machine learning, and artificial intelligence will provide military leaders, the intelligence community, and senior civilian officials with the information necessary to anticipate, rather than react to, competitors' actions.

All-domain awareness is the first critical step on the path to **decision superiority**, and USNORTHCOM and NORAD require and have prioritized capabilities that improve our domain awareness and global integration with our fellow warfighters. Sensors and systems such as Over the Horizon Radars, polar satellite communications, Integrated Underwater Sensor Systems, and space-based missile warning and tracking sensors are essential to our missions. And while the benefits to continental defense are clear, these capabilities will also help every U.S. combatant commander around the world while enhancing USNORTHCOM and NORAD's collective ability to defend the United States and Canada.

In September 2020, just after I assumed command of USNORTHCOM and NORAD, the commands partnered with the United States Air Force and United States Space Command in the second onramp demonstration of the Air Force's Advanced Battle Management System (ABMS). This large-scale joint force demonstration established a network with embedded machine learning and artificial intelligence to rapidly detect, track, and positively identify a simulated cruise missile threat, while providing a common operating picture and all-domain awareness for commanders at multiple levels.

The ABMS onramp demonstration provided a brief but exciting glimpse into the future of USNORTHCOM and NORAD. By creating potential pathways for accessing and distributing data in ways that allow leaders to think, plan, and act globally rather than relying on outdated regional approaches, we are significantly amplifying the capability of the joint force. Through these and other efforts, USNORTHCOM and NORAD are actively working to deliver

information dominance by fusing new technologies to increase decision space for commanders and senior civilian decision makers. Ultimately, our objective is to enable leaders and commanders all over the world to quickly assess any situation and take the steps necessary to stay well ahead of an adversary's next moves in order to deter and deny in competition, deescalate in crisis, and defeat in conflict.

In March of this year, USNORTHCOM and NORAD led a Global Information Dominance Experiment (GIDE) that brought leaders from all 11 combatant commands together in one collaborative environment. GIDE demonstrated the strategic value of Joint All-Domain Command and Control by allowing combatant commands to rapidly share information across all domains and collaborate in near real-time. During this experiment, which included a NORAD live-fly exercise, we worked with industry partners to fuse all-domain sensing within a common data system in order to develop globally integrated courses of action and advance the Joint Force's **information dominance** capability. This experiment demonstrated the power of artificial intelligence and machine learning tools, which have the ability to expand decision space for decision makers. Through GIDE events, we will continue to test these capabilities, improve global integration, and help the DoD and allies increase **all-domain awareness** to enable **information dominance**—and ultimately achieve **decision superiority**.

The prototype Pathfinder data analytics project provides another example of how USNORTHCOM and NORAD are working to leverage existing but stovepiped data streams to the benefit of both operational and strategic decision makers. In our ongoing prototype efforts, Pathfinder gathers data from multiple distinct military and civilian air domain sensors and, through automation and machine learning models, produces a fused common operating picture to improve the reliability of the data and increase the decision space that will someday soon be available in real time to our assessors and watch-standers. This low-cost, rapidly developed system will have long-term benefits for our domain awareness and has already shown some of the advantages that information dominance will provide to warfighters around the world.

Information is power, but only if it is accessible, sharable, and actionable. Unlocking the enormous potential of the data currently being collected by a global layered sensor grid will allow us to gain a decisive advantage over competitors and potential adversaries. Currently, vast quantities of data are trapped by incompatible systems and antiquated organizational structures. Breaking down these stovepipes is achievable, but doing so will require innovation and coordination across various agencies, to include technology that allows for timely exploitation of the massive volume of data collected by our sensor networks. More importantly, it will also depend on breaking away from a culture that favors compartmenting and isolating information, in order to fully realize the full potential of our capabilities—including those that reside with our allies and partners. As the defense and intelligence communities connect systems and sensors, consideration of national electromagnetic

spectrum management policies is needed to ensure that necessary connections and bandwidth are accessible.

As our competitors rapidly develop and deploy advanced capabilities with clear intent to overcome the U.S. technological advantage, the Department of Defense and the U.S. Government as a whole must also modernize our requirements and acquisition processes to stay ahead. Given the current pace of technological advancement, we must take full advantage of the forward-thinking solutions our industry partners can offer. To succeed in this era of Great Power Competition, it is essential to rapidly deliver capabilities to the warfighter by streamlining the processes for prototyping, testing, and moving promising technologies into production.

The success of USNORTHCOM and NORAD's Pathfinder program, along with much of the work done by DOD's Defense Innovation Unit, show what is possible when we provide innovators and technical experts the resources and flexibility to tackle even the most daunting challenges. The same approach should also be applied to software development and acquisition. Success in competition and in conflict will increasingly depend on the ability to field software based capabilities faster than our adversaries. For that reason, I am encouraged by the new model championed by the Office of the Under Secretary of Defense for Acquisition and Sustainment that will enable the Department of Defense to acquire software through modern development practices and deliver needed capability at the speed of relevance.

Armed with timely and accurate information, equipped with modern sensors and software, and backed by a flexible and responsive conventional deterrent that provides defeat mechanisms below the nuclear threshold, commanders and senior civilian leaders will achieve **decision superiority** with the options and time necessary to allocate resources wherever needed to deny or deter aggression in competition, de-escalate potential crises, and defeat adversaries should conflict arise.

Missile Defense

Ballistic Missile Defense

The need for a robust and modern ballistic missile defense system has been strongly reinforced over the past year. Despite U.S. efforts in 2020 to reach an agreement with Kim Jong Un, North Korea continued its development of ICBMs capable of striking targets in the United States. As North Korea continues its pursuit of advanced long-range strategic weapons— including the new systems displayed during their 10 October 2020 parade— USNORTHCOM remains committed to maximizing the capability and capacity of our ballistic missile defense systems.

USNORTHCOM is focused on developing and fielding advanced sensors capable of tracking potential missile threats and providing improved discrimination capability to our warfighters and assessors. Simultaneously, USNORTHCOM is collaborating with our partners in the Missile Defense Agency (MDA) to ensure that the Next Generation Interceptor (NGI) is fielded and operational as soon as possible. Of note, USNORTHCOM worked hand-in-hand with MDA to ensure all of our operational requirements are addressed in the NGI acquisition process. When fielded, NGI will add 20 interceptors to the current inventory, and will provide greater reliability and capability.

As competitor missile technology advances, USNORTHCOM is also working with MDA toward a layered missile defense capability that will allow for a more flexible and responsive defense of the homeland against both ballistic missile and cruise missile threats. The successful engagement of an ICBM-class target by an SM3-IIA interceptor on 16 November 2020 was an historic achievement and a critical step toward establishing this layered capability. Defending the United States homeland against the ballistic missile threat remains a complex and technically challenging endeavor, and I am grateful to the Committee for your continued support as we take the steps necessary to ensure the success of this critical mission.

Cruise Missile Defense

As evidence of both the global nature of the threat and the implicit trust in our bi-national command, NORAD is developing the requirements for the defense of the United States and Canada against advanced cruise missiles. In this capacity, NORAD works closely with the U.S. military Services, the Canadian Joint Operations Command, and a host of other dedicated DoD and Canadian Defence Ministry partners to share costs and ensure a clear, common understanding of the threat and what will be required to mitigate the risk to our nations.

Modern cruise missiles are difficult to detect and can be launched from significant distances against targets in the United States and Canada from launch sites on Russian soil and by long-range bombers, attack submarines, and surface vessels. Whether subsonic or hypersonic, these missiles can range targets in the homeland and present a very real challenge for our defensive capabilities. Russia has already amassed an inventory of both nuclear and conventional variants, while China is expected to develop similar capabilities in the next decade.

The proliferation of these systems creates all the more incentive for focused investments in improved sensor networks, domain awareness, and information dominance capabilities. Those investments, coupled with the development of layered denial, deterrence, and defeat mechanisms capable of addressing current and emerging threats, are fundamental to the defense of our homeland.

Conclusion

As USNORTHCOM and NORAD look to a future marked by rapid shifts in the geopolitical environment and technological advancement, we are guided by the lessons of the past. Key among those is that we cannot overcome challenges in isolation. By viewing changing conditions and competitor actions from a global perspective, our problems become more solvable and the solutions more affordable. USNORTHCOM and NORAD will continue to build our partnerships, collaborate with fellow warfighters, and work toward overcoming shared problems rather than continuing to focus on point solutions to isolated threats.

To that end, I look forward to working with the Committee and with all of our innovative industry and interagency partners as we move quickly to develop and field the capabilities required to defend our nations now and well into the future. Together, I believe we can eliminate outdated barriers that only serve to stifle information sharing, and simultaneously foster a mindset that favors creative, forward-looking approaches over unproductive reliance on legacy systems and processes.

Finally, and perhaps most importantly, we will continue to prioritize our most vital asset: our people. With that in mind, I would like to take this opportunity to publicly recognize the select group of USNORTHCOM and NORAD personnel responsible for standing the operational watch 24 hours a day, every day. Their mission is crucial to our defense, and these military and civilian watch-standers have spent much of the last year under strict but necessary isolation protocols to mitigate the risk of a COVID outbreak. They and their families have endured long periods of separation during an already difficult time, and they have done so without any expectation of public recognition. I am honored to lead men and women of such selflessness and professionalism, and our citizens should rest assured these extraordinary defenders have the watch.

Document No. 3. U.S.-China Economic and Security Review Commission, 2021 Report to Congress of the U.S.-China Economic and Security Review Commission (Washington, D.C.: U.S. Government Publishing Office, November 2021), pp. 340-342, 371-373.

Section 2: China's Nuclear Forces: Moving Beyond a Minimal Deterrent (pp. 340-342)

Key Findings

- The People's Republic of China (PRC) is carrying out its most substantial effort to expand, modernize, and diversify its nuclear forces since first acquiring nuclear weapons in the 1960s. The People's Liberation Army (PLA) is developing a nuclear triad; fielding new, more mobile, and more accurate nuclear weapons systems; and

significantly expanding its stockpile of nuclear warheads. The PLA has also enhanced its intelligence, surveillance, and reconnaissance (ISR) systems.

- China's nuclear buildup puts it on a trajectory to become a nuclear peer of the United States in qualitative terms. Qualitative nuclear parity could entail diversified, reliable, and survivable delivery systems; highly precise missiles; warheads of various yields; robust command and control processes; and sophisticated ISR, all of which enable a truly secure second-strike capability and options for calibrated, offensive nuclear use. Current public projections suggest China could also become a quantitative peer in the number of land-based strategic missiles it deploys by 2030.
- Strategic and political forces are driving China's departure from a minimalist nuclear posture. For most of its modern history, China maintained a small nuclear stockpile mainly suitable for minimal retaliation against an adversary's nuclear attack. General Secretary of the Chinese Communist Party (CCP) Xi Jinping's ambitions for great power status, combined with military objectives beyond minimal retaliation, have likely motivated the recent buildup of China's nuclear arsenal.
- At minimum, China's nuclear buildup enhances its current retaliatory strategy by better enabling its nuclear forces to deter or respond in kind to a nuclear attack. Chinese leaders may worry that innovations in other nuclear weapon states have undermined their nuclear deterrent, requiring them to make changes in order to keep up.
- The scale of China's nuclear buildup, however, suggests it could also be intended to support a new strategy of limited nuclear first use. Such a strategy would enable Chinese leaders to leverage their nuclear forces to accomplish Chinese political objectives beyond survival, such as coercing another state or deterring U.S. intervention in a war over Taiwan.
- Uncertainties created by China's nuclear buildup heighten the risk of an accidental nuclear exchange or unforeseen nuclear escalation during a regional conflict. Specific risks of nuclear escalation stem from entanglement between China's nuclear and conventional capabilities, its desperation to avoid losing a conventional war in the region, and false alarms that could result from its possible shift to a launch-on-warning posture.
- The PLA's growing arsenal also casts "nuclear shadows" over China's disputes with its neighbors, many of whom are U.S. allies and partners. Improved nuclear capabilities could encourage Chinese leaders to coerce or initiate a conventional conflict against U.S. allies or partners in the region if they believe their nuclear capability would deter the United States from intervening.
- China has continued to play a concerning role in the global proliferation of missile and nuclear technologies, though the manner in which this proliferation occurs has evolved over time. Whereas two decades ago the Chinese government and state-owned enterprises (SOEs) were the main source of missile and nuclear technologies,

Chinese companies and private individuals now play a dominant role in the proliferation of such goods to countries of concern. The Chinese government turns a blind eye to, and in some cases tacitly supports, these illicit activities.

Recommendations

The Commission recommends:

- Congress direct the Administration to conduct an interagency review of any Chinese universities that maintain research or training arrangements with China's nuclear weapons research institutes, such as the Chinese Academy of Engineering Physics and the Northwest Institute of Nuclear Technology. The review should be led by the U.S. Department of Energy and include the U.S. Departments of Commerce, Treasury, and Defense; the Intelligence Community; and other federal departments and agencies as appropriate. The review would:
 - Assess the impact of such cooperation on China's nuclear weapons programs and capabilities;
 - Assess whether current U.S. export controls adequately address risks from the transfer and exchange of information and technologies with applications to nuclear research, particularly by researchers and departments in relevant academic disciplines at U.S. universities to these Chinese universities;
 - Identify Chinese universities and research institutes that should be added to the Entity List, based on the risks posed by their cooperation with the Chinese Academy of Engineering Physics, Northwest Institute of Nuclear Technology, and other Chinese institutions involved in nuclear weapons development, as appropriate;
 - Identify Chinese universities and research institutes that merit a presumption of denial for all export licenses involving items covered by the Export Administration Regulations; and
 - Develop and maintain a list of all academic partnerships in fields with applications to nuclear weapons development entered into between Chinese universities and U.S. universities that receive federal funding for the purpose of determining whether these activities are subject to export controls.
- Congress prevent the erosion of U.S. strategic nuclear superiority and respond to China's qualitative and quantitative theater nuclear advantages by directing the Administration to continue implementation of the Obama-Trump Program of Record for nuclear modernization.
- Congress enact legislation creating an independent bipartisan commission, similar to the Quadrennial Defense Review commissions authorized in the past, to assess the Nuclear Posture Review and advise Congress about whether the current U.S. nuclear

posture is sufficient to maintain deterrence against the expanding Chinese and Russian nuclear forces. The Commission should:

- Determine how Russian and Chinese nuclear capabilities have changed between 2010 and 2022;
 - Evaluate whether the current number of U.S.-deployed strategic weapons is sufficient to deter both Russia and China over the next 20 years; and
 - Identify any further changes required to U.S. force posture, doctrine, and missile defense.
- Congress authorize funding for a comprehensive diplomatic strategy on nuclear deterrence and arms control. This comprehensive program would include:
 - Intelligence diplomacy with key allies and partners in the Indo-Pacific and in Europe to inform them of developments in China's nuclear forces;
 - Dialogue to convince these allies and partners to pressure Beijing diplomatically to enter into arms control talks and to explore these partners' willingness to host U.S. intermediate-range forces and other U.S. assets; and
 - Continued efforts to engage both Russia and China in trilateral arms control talks, including by continuing efforts with Russia to persuade China to enter into arms control discussions.

Implications for the United States (pp. 371-373)

The rapid buildup of China's nuclear arsenal signals a clear departure from the country's historically minimalist nuclear posture. It suggests Chinese leaders are more expansively redefining the requirements of their assured retaliation strategy and potentially even contemplating a more ambitious strategy envisioning the first use of nuclear weapons to accomplish China's regional objectives. As Dr. Roberts observes, the significance of China's buildup for the United States "depends, in part, on China's answer to the question, 'How much is enough?'" and that so far, "China has given us no answer."²¹²

China's nuclear buildup puts it on a path to become a qualitative nuclear peer of the United States in around a decade, with a similarly diversified, precise, and survivable force.²¹³ Such a force would give China a truly secure second-strike capability as well as options for highly calibrated nuclear use that could support both their current assured retaliation strategy and a new strategy of limited nuclear first use in the region. China could even become a quantitative nuclear peer if projections for the growth of the land-based leg of the nuclear

²¹² Brad Roberts, oral testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China's Nuclear Forces*, June 10, 2021, 188.

²¹³ Brad Roberts, Director of the Center for Global Security Research at Lawrence Livermore National Laboratory, interview with Commission staff, August 27, 2021; Brad Roberts, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China's Nuclear Forces*, June 10, 2021, 4-5.

triad are correct. Regardless of what the future holds, however, several troubling implications are already apparent.

First, China's growing nuclear capabilities create uncertainty and raise the risk of accidental or unforeseen nuclear escalation during a regional conflict. Because some of the PLA's conventional and nuclear forces and supporting infrastructure are either comingled or indistinguishable, the United States might accidentally attack nuclear capabilities in the course of attacking nonnuclear capabilities during a conventional war in the Indo-Pacific. Such a situation could lead to "crisis instability" whereby China resorts to nuclear first use in order to preserve its nuclear deterrent, which it believes to be in serious danger. Reducing the risks stemming from entanglement in the PLA will be challenging because Chinese leaders may worry they will undermine deterrence or reduce operational efficiency if they agree to reduce entanglement.²¹⁴ Moreover, Chinese leaders may not believe that accidental nuclear escalation is a serious concern. The belief that inadvertent escalation is unlikely actually makes it more probable, however. As several nuclear experts affiliated with the Carnegie Endowment for International Peace argue, this view "leaves political and military leaders less inclined, in peacetime, to take steps that could mitigate the risks and more inclined, in wartime, to interpret ambiguous events in the worst possible light."²¹⁵ Similar risks of unintentional nuclear escalation could stem from a launch-on-warning posture, which is prone to false alarms.

Second, China's growing nuclear capabilities raise the risks that a conventional conflict in the Indo-Pacific could escalate to a deliberate nuclear exchange, though these risks are still small in absolute terms. The expansion, modernization, and diversification of China's nuclear forces give the PLA greater flexibility, resiliency, and capacity to use its nuclear weapons. According to Dr. Roberts, the result of these changes "will be a China that's more confident in running risks, military and political, and more risk for the United States in defending its interests in a conflict over Taiwan or elsewhere in the region with China."²¹⁶ In a high-stakes conventional war, Chinese leaders could conceivably decide to threaten or engage in limited nuclear use against U.S. conventional forces and bases for fear of losing the conflict or their grip on power.

Third, China's growing nuclear capabilities could strain U.S. extended deterrence by emboldening conventional aggression or nuclear coercion against U.S. allies and partners. As China's nuclear arsenal grows, Dr. Roberts observes, Chinese leaders could become confident in their "ability to suppress escalatory responses by the United States because of

²¹⁴ James M. Acton, Tong Zhao, and Li Bin, "Reducing the Risks of Nuclear Entanglement," *Carnegie Endowment for International Peace*, September 12, 2018.

²¹⁵ James M. Acton, Tong Zhao, and Li Bin, "Reducing the Risks of Nuclear Entanglement," *Carnegie Endowment for International Peace*, September 12, 2018.

²¹⁶ Brad Roberts, oral testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China's Nuclear Forces*, June 10, 2021, 188.

the long shadow of nuclear weapons.”²¹⁷ With stability achieved at the strategic level, Chinese leaders may feel more confident in their ability to use conventional force to resolve territorial disputes over Taiwan, the East China Sea, or the South China Sea. They could also stop short of using force and instead rely on their nuclear arsenal for coercion. Chinese leaders’ possible interest in threatening nuclear use to deter Japanese involvement in a Taiwan contingency seemed evident in the decision by a municipal Chinese government authority to repost on social media a video threatening Japan with nuclear war in July 2021 after Japanese leaders made statements indicating they could come to Taiwan’s defense.²¹⁸

Fourth, improvements in China’s nuclear forces could complicate U.S. nuclear deterrence planning in the future even if they do not presently threaten the survivability of U.S. nuclear forces. Never before has the United States faced two peer nuclear-armed adversaries at the same time. The pace of China’s nuclear modernization, the expansion of its nuclear warhead stockpile, and the extent to which it cooperates with Russia may require the United States to reexamine its deterrence strategies and force posture. Dr. Roberts told the Commission the major challenges for the United States in the decades ahead are “whether, as China’s nuclear force grows ... we need a strategic force of our own that’s larger as well” and “whether [China and Russia] are an additive problem or whether China remains a lesser-included problem because it’s a smaller force.”²¹⁹

Fifth, China’s expanding nuclear arsenal raises the specter of an arms race. China’s longstanding refusal to engage in arms control inhibits deeper arms reductions by the United States, exacerbates the anxiety of U.S. allies, and prompts other countries to hedge in their nuclear strategies.²²⁰ Chinese leaders may be uninterested in creating mechanisms for crisis communication and management because, as Mr. Denmark observes, “the way they make decisions, the way they share information, does not lend itself well to those sorts of communications.”²²¹ Without China’s participation in arms control, an unbridled arms race between the world’s major nuclear powers could develop and U.S. allies and partners in the Indo-Pacific could decide to pursue their own nuclear deterrents.

²¹⁷ Brad Roberts, “Taking Stock: U.S.-China Track 1.5 Nuclear Dialogue,” *Lawrence Livermore National Laboratory*, December 2020, 51.

²¹⁸ Emily Clark, “Military Fanboys’ Shared a Video Threatening Nuclear War. This Is Why China Allowed It,” *ABC News*, July 19, 2021.

²¹⁹ Brad Roberts, oral testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China’s Nuclear Forces*, June 10, 2021, 217.

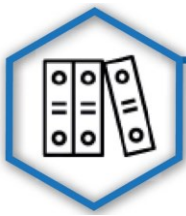
²²⁰ Brad Roberts, oral testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China’s Nuclear Forces*, June 10, 2021, 140.

²²¹ Abraham Denmark, oral testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China’s Nuclear Forces*, June 10, 2021, 214.

Finally, the Chinese government's tolerance for Chinese companies and individuals' proliferation of dual-use technologies undermines the global nonproliferation regime and poses a different type of nuclear threat to U.S. allies and partners. The nuclear and ballistic missile technologies provided by various Chinese entities to Iran,

North Korea, and Pakistan over the years will continue to threaten the security of U.S. allies and partners such as Israel, Saudi Arabia, South Korea, Japan, and India. Combined with the direct threat posed by the PLA's growing nuclear arsenal, the indirect threat posed by such proliferation will increase the pressures on U.S. allies and partners to develop missile defenses and credible second-strike capabilities of their own.





FROM THE ARCHIVE

Deterrence is Not Enough: Security Requirements for the 21st Century

**Speech given by the Rt Hon the Baroness Thatcher LG OM FRS
to a Conference of the National Institute for Public Policy
Washington, D.C., Thursday, 3 December 1998**

Purpose

The former Israeli foreign minister, Abba Eban once remarked that democratic leaders could always be relied upon to adopt the wise and prudent course - once all other possibilities had been exhausted.

I believe that in responding to new and disturbing developments within the security environment, the West is proving to be needlessly painstaking in exhausting those 'other possibilities.' The point of Dr Payne's conference is doubtless to speed up the process. I congratulate him on his initiative, and promise to do all I can to help.

Indeed, there are two good reasons for congratulating the National Institute for Public Policy for having organised this conference.

First, the programme focuses on a real crisis, as opposed to the kind of 'crises' that scream for remedy in our newspapers, but which are no more than the reflection of minor or transitory ills. By contrast, the crisis with which we are concerned today, that of the proliferation of weapons of mass destruction, does merit that description.

Secondly, the conference programme obliges us to reflect more deeply on the ways in which the international order has changed since the collapse of the Soviet Union, and on the implications of that change for our security. These are matters which I believe have still not been given the attention they deserve, but which can only be neglected at our peril.

The History of Offensive and Defensive Weapons

It is already clear that one of the most remarkable features of the chapter of history which has recently closed was the reliance placed on offensive weapons. This stands in marked contrast to previous centuries. Indeed, from the very earliest times armies incorporated offensive and defensive weapons and strategies. Progress in the development of the one was followed by corresponding improvements in the other. So more deadly swords led to the creation of better armour. Improvements in fortifications led to more imaginative means of breaching and scaling castle walls.

In modern times, the development of the tank led to the invention of a range of anti-tank weapons. Similarly, the development of the bomber - "the ultimate weapon" - led to the



introduction of radar systems capable of tracking its flight, and to the use of anti-aircraft guns and fighter planes to shoot it down.

In large part, the history of warfare is thus the story of the competition between offence and defence. Sometimes, the balance of advantage has been with attack, and at other times, with defence; at others defence and offence have been so keenly matched that other things being equal, aggressor and defender fought themselves to a standstill.

During two world wars, Britain used both active and passive means to defeat German aggression. In 1915, German policy makers hoped that the deployment of the Zeppelin would paralyse London and have a decisive impact on morale. For the first time ever, civilians were the indiscriminate targets of attack from the air. Initially, the German Zeppelin offensive appeared to achieve its aim; war production fell and morale plummeted as Londoners took refuge in improvised shelters, including the London Underground. But within a short time Britain developed the first integrated air defence system, comprising anti-aircraft guns and fighter planes, an early warning system, and civil defence.

On 2 September 1916, British forces shot down one Zeppelin. However, by 1 October, British forces had effectively neutralised the Zeppelin threat, shooting down a further three. One eye witness recorded: "...blazing from end to end like an enormous cigar, the Zeppelin canted over and sank nose down-towards the earth. Sounds of cheering came over the air....the Zeppelins had suddenly become prey to the defences."

In the inter-war period, as Hitler rearmed, fears about the vulnerability of London in a future conflict grew again. Winston Churchill described the capital as "...the greatest target in the world...a valuable fat cow tied up to attract the beasts of prey." While Stanley Baldwin, leader of the National Government, emphasised our vulnerability to air attack by famously declaring: "The Bomber will always get through." But when war came the German bomber, although much improved since the days of the Great War, did not always get through. During the crucial months of August and September 1940, 600 were shot down, either by British fighter pilots, or by ground batteries. As a consequence, Hitler abandoned his plans for invasion. It was the Nazis' first defeat, and because it assured the survival of an independent Britain, it proved an historic turning point. Credit for victory in the Battle of Britain has understandably gone to the "Few" - the young pilots of the Spitfires and Hurricanes of whom it is still impossible to think without being moved by their courage and self-sacrifice. But it is important to remember that their triumph was only possible because they were part of a comprehensive air defence system.

When Hitler abandoned his invasion plans and switched to the bombing of industrial centres and cities, Britain's air defences were again adapted and modified. With the help of American technology they were further strengthened to meet the challenge of the V-1, a pilotless aircraft powered by a pulse jet, the forerunner of today's cruise missile. Just a few weeks after a government minister announced that the battle for the defence of London had been won, some 10,000 V-1s were fired on the city, and more than 2,000 hit their target. At first

the V-1 achieved a high success rate, causing more than a million Londoners to be evacuated from their homes and many thousands of casualties. But five weeks after the first V-1s rained down on London half of them were being intercepted or shot down, and this figure rose to ninety per cent by the eleventh week of the V-1 campaign. Morale rose as the public came to realise that its greatest fear - that the capital was defenceless in the face of such attacks - was groundless, and that once again the Nazi challenge was being seen off.

No defence, however was available against the V-2 rocket, the world's first tactical ballistic missile, a fact which made an inevitable impact on public morale and confidence. Because the rockets flew faster than sound there was no warning of an attack: a gap would suddenly appear in a row of houses to be followed by the sound of an explosion. The rockets caused more than 21,000 casualties before British soldiers overran the V-2 launch sites in Holland.

Even so, had Hitler realised the potential of the rocket programme earlier the weapons could have played havoc with the preparations for the Allied invasion of France. And there were also plans to use the V-2 as the second stage of a rocket capable of striking America.

Cold War Strategy—Mutually Assured Defence

The strategic environment was again transformed by the development of long range nuclear weapons during the early stages of the Cold War. It was now argued that this technological change meant that deterrence was henceforth the only rational basis for effective defence. Here surely, the argument ran, were weapons of such immense destructive force, so devastating in their consequences and so unstoppable in their delivery, that once these were possessed by both Cold War adversaries mutual deterrence, and so peace, was assured.

It followed - or seemed to follow - that no step should be taken to protect the civilian population or industry from a nuclear attack since this would undermine the very threat on which human survival depended. Each super-power had effectively taken the other's population hostage, or so many of the West's influential strategic thinkers argued. As a consequence, vulnerability to the most lethal weapons that the world had ever known was viewed as the key to preserving the human species in the Nuclear Age. This entirely novel view - for no one had ever before suggested that it was a good idea to be defenceless against armed attack - was expressed in the doctrine of Mutually Assured Destruction, otherwise known as MAD. Accordingly, the well-placed advocates of MAD resisted all attempts to re-open the question of researching and deploying defences against missile attack.

I don't want to revisit the controversies that once raged over such matters, but it is worth recording that although nuclear deterrence was rightly at the core of western strategy, we never wholly relied upon it. The threat of massive retaliation proved unrealistic and unwieldy in some of the scenarios which political and military leaders were actually obliged to contemplate. So, various modifications and revisions were made to give greater flexibility and credibility to western strategy. Nevertheless, MAD remained influential; it shaped the climate in which military planners thought about preventing a war with the Soviet Union -

and most relevant for us now, it helped pave the way for the 1972 Anti-Ballistic Missile Treaty.

The Strategic Defence Initiative

According to Secretary of State Rodgers, one purpose of that treaty was to serve as a kind of teaching aid to enable the Soviet leadership to understand the logic of assured mutual vulnerability and to signal their belief in it. Alas! By the 1980s it was becoming clear that the Soviet leaders were slow learners. They had signed the Treaty but had obvious difficulty in grasping that the best interests of the Soviet Union lay in its vulnerability to US missiles! They took industrial and civil defence seriously, and invested heavily as we now know in the development of defence against missile attack which was in clear breach of the Treaty.

No fundamental change in Western strategic thinking occurred until the visionary speech of Ronald Reagan of 23 March 1983, in which he opened up the prospect of using advanced technology to destroy enemy missiles in flight. The intense opposition which that speech aroused in certain circles in the West, is a reflection of the widely held belief that defence against missile attack would undermine deterrence and thus make a thermonuclear war more likely. During this period I came to believe exactly the opposite: namely, that properly configured defences against missile attack could strengthen deterrence by protecting America's retaliatory capacity. What I did not realise at the time - what I think probably no one then realised - was the profound impact of the SDI programme upon events within the Soviet Union. Recognising that it could not compete in a qualitative arms race with the United States without modernising its economy, the Soviet leadership, first under Andropov, and then under Gorbachev, set in train a series of economic and political reforms. Perestroika had the aim of preserving Soviet communism - but it led to loss of political control. The forces of reform once unleashed proved beyond the leadership's power to direct, and this led ultimately to the collapse of the ideology which the Soviet leaders sought to protect, and of the unlamented empire created in its name. Thus, SDI - widely criticised on the grounds that it threatened to undermine the peace - helped foreshorten the life of an implacable adversary, bringing an end to the Cold War and giving millions of citizens in Central Europe and Russia the chance of freedom and a better future. I do not know of any greater historical irony.....unless it be the fact that the ideas embodied in SDI have not been applied, while the old ABM Treaty is still revered as the cornerstone of stability!

So let me recap at this point. While deterrence is still necessary, it is not enough. During the Cold War, an era in which military technology greatly favoured the offensive, deterrence worked. Although there were some close calls, it was credible enough in the circumstances to deter an attack. And it is clear that two factors helped in this. First, although the Soviet leadership remained faithful to an expansionist ideology until the very end, it was mostly not adventurous. It preferred to pursue its aims through support for proxy forces or terrorists and through low-intensity conflict by means of subversion, propaganda, and disinformation. The men in the Kremlin believed that inexorable forces of history assured their ultimate triumph - so they could afford to wait.

Secondly, during the Cold War, we were in the rare situation of having to deal with a single adversary whom we came to know, one whose reactions and behaviour we could often anticipate, and with whom we could usually communicate effectively. Even so there were misunderstandings and some moments of acute tension in super power relations.

Post Cold War Threats—Proliferation and Its Consequences

With the end of the Cold War the whole security equation changed. As Soviet power broke down, so did the control it exercised, however fitfully and irresponsibly, over rogue states like Syria, Iraq and Libya. They have in effect been released to commit whatever mischief they wish, without bothering to check with their arms supplier and bank manager.

One of the most alarming aspects of this transformed picture is the ease and speed with which Third World states have begun to acquire the weapons of mass destruction and the means to deliver them. In 1995 the then Director of Central Intelligence stated that no country, other than major declared powers, would in the next 15 years, acquire a ballistic missile that could strike America. Alas, it now appears that he was mistaken.

Indeed, it is evident that proliferation is accelerating so rapidly that our depleted intelligence services are having difficulty in keeping track. This is partly the result of co-operation and trade between states, and partly due to the sale of military technology to third parties by Russia and China, both of which continue to modernise their own missile forces.

It is also due to the astonishing ease with which many of the necessary technologies can now be acquired from the West. The German scientists who built the V-1 and V-2 rockets, and the outstanding British and American scientists who developed the atomic weapon, had to overcome huge scientific and technological problems. Today, all that is required, I am told, to build a missile or weapon of mass destruction is a credit card, a shopping list, and a personal computer. Some of the necessary technologies can be bought over the counter, some over the internet. So-called 'secrets' can be obtained from technical books and magazines easily available from American bookshops and libraries. According to a recent majority report from a Senate sub-committee on the problems arising from missile proliferation, much useful information can also be obtained from scientific institutions anxious to share the fruits of their research with mankind. NASA, for example, welcomes visitors to its homepage on the website with the following message: "The Internet puts the vast technical resources of the United States - and those of other countries - at the disposal of anyone with a telephone line." The report lists a range of research papers obtainable through NASA, which would be of undoubted use to those with ambitions to join the club of nations possessing missiles and weapons of mass destruction. All of that is in addition to technologies that may be purchased from China (probably the biggest supplier), from Russia, and from North Korea.

Although it is clearly getting easier, and cheaper, to build ballistic missiles and the various warheads with which they may be armed, skilled technicians and engineers are still needed

to complete the task. But here again, the West is abundant in its gifts. A state bent on acquiring or developing missiles or weapons of mass destruction can equip its technicians and engineers with the relevant knowledge and skills by the simple expedient of having them enrol at Western universities. I was amazed to learn recently that since the Gulf War, the US has granted visas to more than 140,000 students and their dependants from North Korea, Iran, Iraq, Libya, Syria and China. A high proportion of these students are known to have pursued degrees in science and engineering, although no attempt is made to monitor their subsequent careers.

Not surprisingly the Rumsfeld Commission, which was recently asked by Congress to report on the missile threat against the United States, has concluded: "Nations that want to develop ballistic missiles and weapons of mass destruction can now obtain extensive technical assistance from outside sources. Foreign assistance is not a wild card. It is a fact."

It is indeed a fact that the freedom and openness of American society assists those to whom openness and freedom are anathema and who would like to snuff out any glimmer of freedom in their own societies.

It is a fact, too - although a curious one - that the sale of small arms to gun enthusiasts or sportsmen produces a greater sense of moral outrage in Western society, than is produced by the sale to psychotic despots of weaponry capable of killing thousands.

According to the Rumsfeld Commission there are now an estimated 13,500 missiles in 26 countries, with as many as 30 new types of missile under development. Moreover, as far as warhead technology is concerned, a recent report from Lancaster University suggests that 18 countries possess nuclear, chemical, or biological capabilities.

The authoritative report of the Rumsfeld Commission is cautious in reaching judgement but it finds that within five years of a decision to acquire such a capability, North Korea and Iran would be able to inflict major destruction on America. In the case of Iraq the period would be 10 years. But for much of that time the United States might not know that such a decision had been taken. Although the Commission does not say so, it is clear that for reasons of distance the danger is maturing even more quickly for Europe than for here.

The Rumsfeld Commission concludes:

First, the threat posed by these emerging capabilities is broader, more mature and evolving more rapidly than reported by the intelligence services

Secondly, the intelligence services' ability to provide accurate and timely estimates of missile threats is being eroded, and the warning time of missile deployment that the US can expect is being reduced

And thirdly, nations are increasingly able to conceal important elements in their missile and weapons programmes and are strongly motivated to do so.

So what is to be done?

It would be convenient if we could rely on the weapons and responses developed during the Cold War to prevent future wars, and could do so with confidence. But that's not possible. In the coming decades we will have to deal with a range of potential adversaries and scenarios, and what will work in one case will not work in all.

To successfully deter an enemy requires some knowledge of how that enemy is likely to react in particular circumstances. That in turn requires some insight into his background and culture.

It is also important that potential adversaries know and understand something about the nature of Western society, not least its capacity to resist aggression in spite of its habitual preference for compromise. Such knowledge reduces the risk of war arising from miscalculation. The Falklands War as well as the conflict in the Gulf, remind us that dictators are prone to underestimate the resolve of democratic states to respond vigorously to aggression. Our strategic intentions must therefore be signalled unambiguously if conflict is to be avoided. We must not give the impression that we in the West have so indulged ourselves on the fruits of peace that we are incapable of protecting our vital interests.

In the case of rogue states I do not believe that the conditions required for deterrence are presently met. Moreover, matters are likely to worsen as the military capabilities of these states grow.

Indeed, we only have to pose some difficult questions to realise the limitations of a response based purely on the threat of retaliation. Would it be worth the American President's time trying to find the basis for common action if it was also known that our adversary's missiles could strike London, Paris or Bonn? And would Washington even contemplate a military response if a Middle Eastern ally was swallowed up by a state with the capacity to target New York with a nuclear missile?

Arms Control and the ABM Treaty

Instead of posing the difficult questions, Western governments have placed great store on diplomatic attempts to discourage the flow of military technology and to bring stability to the international order.

Restricting the flow of technology through the Missile Control Technology Regime and by other formal means should most certainly be tried, even if these attempts do nothing to dampen the desire of the rogue states and others to acquire missiles and their warheads. Some countries may be unwilling to participate in restricting the flow of technology; some may participate but turn a blind eye to violations by exporters. In addition there is the dual use problem and the near impossibility of full and effective monitoring. Diplomatic measures may make the acquisition of the relevant technologies a little harder and more expensive to

obtain. But as a former assistant director of the United States Arms Agency has noted: "...while the Missile Control Technology Regime may be a valuable tool in slowing proliferation it is incapable of stopping it."

Moreover, the benefits of trying to deal with the problem through arms reduction or limitation talks are also likely to be modest, and could even present a number of traps to the unwary. An arms treaty can be valuable in codifying or lending formal expression to an understanding between nations about the levels of weaponry to be deployed, but it cannot of itself produce that understanding. I know of no miraculous diplomatic means by which a nation that doesn't want to be disarmed can be stripped of its weapons. What may be disarmed is public opinion. But there are times when the public should be alarmed, not assuaged. To give the public a sense of security when this not justified by the facts is the very negation of leadership.

Although the complexities of arms control are legion and may be difficult to grasp, the underlying realities are not. States which present no problem to their neighbours will gladly sign and will abide by the rules. But revisionist states - the ones that want to redraw the boundaries on the map - are likely either to refuse to sign, or to sign but get round the provisions of the treaty, or simply to cheat.

Arms talks can have one further defect: the agreements reached may continue to exert an influence long after the circumstances which called them into being have vanished. An arms treaty can end up by damaging the interests it was intended to serve. I suspect that some of you may have guessed the particular treaty which prompts these remarks: the ABM Treaty.

As it happens, the Treaty did not achieve some of its original purposes: it did not produce a slow down in the building of Soviet long range missiles; nor did it prevent the Soviets investing large sums in developing ballistic missile defence. Nevertheless, it was possible to understand the case for the Treaty when there was a single military threat. But those days are gone. So what conceivable sense does it make to keep to a treaty that ensures that the United States and its allies remain vulnerable to multiple threats? Yet the United States government has confirmed its commitment to a Treaty which makes vulnerability a formal obligation, and has signed a Memorandum of Understanding which enlarges the number of signatories by including Belarus, the Ukraine, and Kazakhstan. This is likely to make withdrawal from or revision of the Treaty more complex and difficult. The preservation of this Cold War relic is bizarre, and I am somewhat baffled when spokesmen for the United States government describe it as the cornerstone of strategic stability.

To continue to regard strategic relations between the United States and Russia, important though they are, as the centrepiece of American security policy in this way is to ignore important respects in which the world has changed. It is the political equivalent of continuing to dance the waltz when the orchestra has changed to one of those modern dances in which there are no set steps and all who wish to participate may do so.

I believe that the case for the deployment of a global ballistic missile defence system is now overwhelming. The requirements of such a system are also clear: it must be capable of providing protection for America, its armed forces and its allies against a limited or unauthorised attack, while strengthening deterrence against the now-reduced threat of a major missile offensive. The deployment of such a system should generally dampen the impulse to acquire offensive systems, and contribute to regional stability by reducing the risk of surprise attack.

Having followed the progress of research into ballistic missile defence during the 15 years since President Reagan's landmark speech, it seems clear that a global system would include space-borne sensors and interceptors in order to target missiles in the early stages of their flight, as well as ground-based systems. And I believe that NATO provides the most appropriate organisational means by which America's European allies can make their contribution.

Conclusion

To sum up.

My friends, human ingenuity is such that a way will always be found to counter new weapons, however destructive or "smart." Equally, ways will be found to modify those weapons so that they in turn can "outsmart" the latest improvement to the defence. The competition between offence and defence did not end with the advent of the nuclear missile, as some strategists appeared to believe, any more than it did with the Zeppelin. With the improved perspective which the end of the Cold War permits we can see that the renunciation of the means to defend our cities against missiles was, in historical terms, an aberration.

Remaining vulnerable to Soviet missiles was the consequence of a flawed logic, but there is no logic in a policy decision that ensures that North America and Europe remain vulnerable to missiles targeted at them by the tyrannical and ruthless leaders of volatile and unstable regimes. The absence of systems capable of defending Western cities against missile attack will be seen as an incentive for those leaders to make the acquisition of missiles and weapons of mass destruction their top priority.

Conversely, the deployment of a global ballistic missile defence system could dampen the desire to acquire those weapons by virtue of its ability to frustrate their use. In an increasingly unstable, and fast moving world such a system possesses a stabilising potential; without ballistic missile defence it will become much more difficult for America to remain true to her best traditions of international engagement.

For these reasons the ABM Treaty does not enhance our security in the coming century; rather it represents a pointless constraint on America's ability to protect her cities, her civilian population, her armed forces, her interests, and her allies. A vulnerable giant attracts tormentors who will become bolder as they see that the giant has denied himself the means of protection.

This thought clearly inspired the cartoonist who illustrated the cover of the Senate report to which I referred earlier in my remarks. The illustration shows Uncle Sam as Gulliver newly arrived in Lilliput and chained to the ground as the Lilliputians clamber disrespectfully all over him. The comparison is apposite, except in one respect: the bonds which held down Swift's fictional hero were tied by the Lilliputians, rather than by Gulliver himself.

I am a great admirer and friend of America, one who is mindful of the enormous benefits my country has enjoyed as a result of its friendship with the United States. I continue to believe that American influence in the world is crucial but that it may diminish in the absence of effective global defences against missile attack.

As matters stand, America - and so the West - is in danger of entering a new century. with a strategy designed to counter a foe that no longer exists, with notions of deterrence designed to meet the requirements of a world that has changed, and constrained by a treaty that bears no relation to reality.

As I have argued in the past, the risk is that thousands of lives could be lost in an attack which foresight and prudence might have prevented.

My friends, it is a risk too far.

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