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Deterrence Then and Now.

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Abstract: Against the backdrop of an international system becoming more confrontational in nature, the subject of deterrence is back again. This article provides an overview of the nature of the deterrence problem during the Cold War period and today. While the broader circumstances have changed markedly, today, the central issue of deterrence remains the same as in the Cold War: how to maintain the credibility of the American threat to employ nuclear weapons in the defense of allies in the face of adversaries that can retaliate with devastating nuclear attacks against the US itself. There is little doubt about the threat of the US or other nuclear powers to retaliate in the event of a nuclear attack against their own homelands, so long as those retaliatory forces can survive the initial attack. The problem is the credibility of US extended deterrence.

Keywords: deterrence, extended deterrence, Cold War, USA, nuclear weapons

1 Introduction

During the Cold War deterrence was at the heart of Western defense policy. It was linked to the idea that it would be meaningful and possible to assert oneself against a militarily armed opponent without having to maintain equally capable armed forces or even without having to conquer the enemy's territory. Deterrence, on the one hand, is a defensive form of dealing with military threats and is aimed at moderation and preventing war. On the other hand, it can only be effective if it includes the most extreme forms of military threats – such as the use of nuclear weapons. With their development, many hoped that after the Second World War preventing war by deterrence was not only possible but also necessary. This idea was first expressed in 1946 by the American strategist Bernard Brodie, who wrote: "Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them."[1]Against the background of the Second World War experience, and given the United States' initial monopoly on nuclear weapons, the idea of achieve the prevention of war through nuclear deterrence was tempting.

However, this simple equation remained valid only for a short time. Soon the Soviet Union – and subsequently other states – came into possession of nuclear weapons. Due to this fact, the dynamics of the military situation in Central Europe, and the agonizing discussions within the Western alliance regarding the credibility (and the morality) of an extended deterrent, the debate on the issue of deterrence could never be completely resolved and only disappeared with the end of the East-West conflict. At the present time, we are again starting to think about deterrence with regard to Russia, China, and Iran. We are faced with both old and new problems. The following article therefore will first outline the debates on deterrence during the Cold War after which the novel challenges and problems of a deterrent policy will be raised.

2 Then: The Cold War

For the United States and its allies, the central issue of deterrence during the Cold War was the credibility of the United States threat to initiate a nuclear attack on the USSR in response to attacks by the USSR below the level of a nuclear attack on U.S. territory. This threat underscored deterrence by punishment – a promise to inflict damage on the USSR that far outweighed any gain that Soviet leaders might believe they could achieve through an attack.[2]

Although the Soviet Union was the principal object of deterrence by punishment during the Cold War, the idea was adapted to other potential adversaries and geographies, such as protecting Japan and South Korea from China and North Korea, in addition to the USSR.

During the 1950s, the United States pursued a strategy of "massive retaliation", a promise to respond to Soviet attack with strikes against Soviet cities, using the hydrogen bombs that were developed during this period. The United States also deployed theater nuclear weapons to Europe that could be used against any Soviet invading

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1 Brodie 1946, 76.

2 The taxonomy of deterrence concepts originates from Snyder 1961, 4; see also Freedman 2004.

forces to make up for NATO's disadvantage in conventional forces. The massive retaliation threat was in the background, in the event the NATO forces were unable to turn back the Soviets and their Warsaw pact allies.

By the late 1950s, it was clear that the USSR was building and would soon achieve the capacity to strike the U.S. homeland with nuclear weapons – first with manned bombers, then with intercontinental ballistic missiles (ICBMs) and finally with submarine-launched ballistic missiles (SLBMs) that could patrol in international waters off the U.S. coastlines. The United States was itself now vulnerable to nuclear attack.[3] This raised the issue of the credibility of U.S. threats to strike Soviet cities when U.S. cities were themselves vulnerable to retaliatory nuclear strikes. In addition, there was a moral issue: should deterrence rely on a threat to kill unarmed innocent civilians? In the early 1960s the Kennedy administration began a search for an alternative strategy. Over the next three decades the United States and its allies continued this search, with the possible ingredients of a new strategy being more or less the same, although with changing terminology – limited nuclear response options and defenses.

2.1 Limited Options

Limited (or selective) nuclear options first sought to shift the punishment threat from Soviet cities to military forces and their support structure. These counter-force attacks would presumably cause fewer civilian deaths because military and related targets were, at least in part, away from cities. Adopting such a strategy would, it was hoped, induce the USSR to adopt a similar strategy and avoid attacking civilians in the event of war. But of course, massive counter-force attacks would nonetheless lead to the deaths of many civilians. Thus the credibility problem was perhaps reduced a bit, but not entirely resolved.[4] Another criticism of the counter-force strategy was that it could create strategic instability. If the side that attacked first could destroy sufficient military capacity of its opponent to limit significantly the damage that would be caused by retaliation, this could create an incentive to either strike first in a crisis or even conduct a surprise attack.[5]

The idea of limited nuclear options, which emerged in the Kennedy administration, would be to limit nuclear strikes in the event of war to a smaller set of targets, hoping that these strikes could change the adversary's mind about aggression and lead to a search for peace. The limited strikes would be a signal of U.S. willingness to escalate the conflict to a higher level leading perhaps to a massive attack by the United States against the Soviet homeland. Limited options could be seen as part of a strategy of graduated response, in which limited attacks would lead to another escalation in the event the opponent persisted in its aggression until, finally, it would come to its senses and stop. The NATO strategy of flexible response, adopted in 1967, was an outgrowth of the discussion of limited options and graduated response. This strategy was "based on a flexible and balanced range of appropriate responses, conventional and nuclear, to all levels of aggression or threats of aggression."[6]

Well before the adoption of flexible response, the United States had deployed to Europe 7,000 nuclear warheads for artillery, rockets, land mines, and aircraft-delivered bombs. Many of these would have been employed, if needed, by non-U.S. allied forces under nuclear burden-sharing agreements between the United States and the NATO allies that hosted the weapons. With the advent of flexible response, these Europe-based nuclear weapons fit nicely into the strategies of flexible and graduated response because they provided a large range of employment options.

By the late 1970s, these concepts included an escalation ladder, in which one step led to a higher one. The concepts also had geographic dimensions in which options confined to forces on the European continent were viewed as inherently more credible than options relying on forces striking from the United States. NATO's dual-track decision, formed in 1979, to deploy U.S. long range theater nuclear forces[7] to five NATO countries explicitly rested on these ideas: Soviet nuclear force developments "cast doubt on the credibility of the Alliance's deterrent strategy by highlighting the gap in the spectrum of NATO's available nuclear response to aggression."[8]

The strategy of graduated response attracted many critics for its lack of credibility and of morality. Some European critics saw it as a U.S. effort to shield the United States itself from nuclear war; the war might be "limited" from the U.S. perspective but catastrophic for Europe.[9]

3 Brodie 1959.

4 Kissinger 1957.

5 Wohlstetter 1959.

6 Communiqué, *Ministerial Meeting of the North Atlantic Council*, 14 December 1967.

7 Pershing II ballistic missiles and ground-launched cruise missiles. These were later referred to as Intermediate Range Nuclear Forces (INF)

8 Communiqué, *Special Meeting of Foreign and Defense Ministers in Brussels*, 12 December 1979.

9 See Kelleher 1975.

Another line of criticism stressed that the Soviets did not imagine nuclear war as consisting of stages. Rather they would use nuclear weapons as needed alongside of conventional forces to insure a decisive military victory in Europe. To the extent the Soviets recognized any limit, it was that the United States and USSR might be sanctuaries in a war in Europe, a concept undermined by the NATO dual-track decision.[10]

During the early years of the Cold War, Great Britain and France each developed their own nuclear forces. In the British case, the reasoning was largely about being a major power: major powers should have nuclear weapons and not rely, at least not entirely, on the U.S. nuclear deterrent force. France shared this motivation, but explicitly questioned the credibility of the American nuclear deterrent as a protector of France. Compared to the U.S., British and French nuclear forces were relatively small; they came to rely mainly on SLBMs and the strategy for use of the force was retaliation against the high value targets of the potential adversary, the Soviet Union during the Cold War.[11]

Other significant military powers in Europe and elsewhere – Germany, Italy, Japan, and South Korea – did not develop their own nuclear forces. Their reasons varied, but all preferred to believe in the credibility of the U.S. nuclear deterrent. Thus, the U.S. strategy of extended deterrence was a keystone of nuclear non-proliferation.

This brief overview of the U.S. and allied thinking surrounding limited options as a means to shore up the credibility of nuclear deterrence during the Cold War does not do justice to the depth and quality of the thinking and of the debate. Thus far, Lawrence Freedman has provided arguably the best single overview.[12]

2.2 Defenses

If deterrence by punishment lacked credibility, perhaps deterrence by denial would suffice. This idea was behind the nearly constant advocacy by the United States (and many other voices) of improving NATO's conventional defenses. If NATO had sufficient conventional military forces to deny the Soviets their war aims, then the Soviets would be deterred from initiating a conflict. The American view during the Cold War was that such capability was in reach, even though NATO forces were quantitatively inferior, and that it was desirable to make the effort to achieve the ability to deter by denial. The conventional military balance in Central Europe was assessed as unfavorable to NATO. In most analytical scenarios, Warsaw Pact forces could achieve a goal of overrunning West Germany in a war fought only with conventional weapons.[13] NATO's European allies deployed significant conventional armed forces alongside U.S. forces on NATO's central front, but the United States wanted them to do more.

In a conventional war, NATO was judged to have an advantage in the quality of its forces, especially air power. One NATO preoccupation was that this advantage could be erased by a Warsaw Pact knock-out blow – a swift air and ground attack on NATO airfields and aircraft which would put these critical assets out of action.[14] NATO spent considerable effort to protect its air assets through hardening of airfields and dispersion of aircraft to secondary bases. This was a strategy of deterrence by denial, in this case with passive defenses. NATO also had active defenses in the form of surface-to-air missiles, its own counter airfield capability, and capable interceptor aircraft.

Late in the Cold War, Western technological developments seemed capable of threatening Warsaw Pact reinforcements along the central front. This was an "offset strategy" in which NATO's ability to see and successfully attack forces well behind the main line of battle could neutralize the Warsaw Pact ground force advantage. By the 1980s, these developments caused Soviet senior military commanders to worry that their edge in conventional capabilities was waning.[15] Perhaps deterrence by denial was in reach after all as the Cold War ended.[16]

Another aspect of deterrence by denial that has infused the American debate about deterrence since the 1950s has been the use of active and passive defenses to protect U.S. and allied forces and civilians from nuclear attack. Passive defenses, such as hardening of potential targets, were generally non-controversial, unless they were deemed futile, as was the case for U.S. civil defense. Anti-air capability was also not controversial. Both the United States and its allies sought to defend their countries against incoming aerial threats.. Development of U.S. and Soviet ICBMs and SLBMs in the 50s and 60s solidified mutual vulnerability because there was no ability to defend against these weapons. This situation was pro-

10 On Soviet nuclear strategy see Leebaert 1981 and Warner 1989.

11 On British and French nuclear policy see Gill 2014, Kohl 1971, Mendl 1970 and Barbier 1993.

12 See Freedman 2003.

13 See Thomson 1988.

14 See Hermann 1982; for a critical assessment of Soviet Blitzkrieg capabilities see Mearsheimer 1982.

15 See FitzGerald 1987.

16 See Cimbala 2013, 111.

foundly disturbing to many. Fred Iklé perhaps put this best: "… our method of preventing a nuclear war rests on a form of warfare universally condemned since the Dark Ages – the mass killing of hostages."[17]

As with limited nuclear employment options, efforts to find a way out of this situation have been sporadically part of the deterrence debate since the 1960s. Both the United States and the USSR developed anti-ballistic missiles (ABM). In the United States (and among U.S. allies), these were politically controversial because they seemed aimed at reducing the mutual nuclear vulnerability that many considered a principal factor in creating stability and avoiding a nuclear war. Of course, eliminating mutual vulnerability was the main motive for advocates of ABMs. However, the Strategic Arms Reduction Talks (SALT) between the United States and USSR led to the 1972 ABM Treaty that, among other things, limited the numbers of ABM launchers to one hundred on each side. Both countries fitted their ABM rockets with nuclear warheads. The USSR chose to protect Moscow – the national command authority (NCA). The United States chose to protect ICBMs rather than its own NCA. The U.S. ABM system was soon abandoned because of its limited capability.

The ABM debate returned with a vengeance following President Reagan's 1983 speech in which he called for the development of a missile defense system to protect both the United States and its allies. Following the speech, the Pentagon established the Strategic Defense Initiative Office (SDIO) to pursue capabilities that would achieve the President's vision. This office and its successor agencies have worked on the major technical challenges to the development of a missile defense system. This includes the challenge of hitting a "bullet with a bullet" because the United States is no longer pursuing nuclear tipped defense missiles but rather wants to develop "hit to kill" systems. Substantial progress has been made and some missile defense systems are now deployed. Nonetheless, the aim of eliminating mutual vulnerability seems as distant as ever.[18]

U.S. allies have been uneasy with ballistic missile defense efforts for several reasons.[19] First, they (along with skeptics in the United States) worried that the pursuit of ballistic missile defenses (BMD) would undermine mutual vulnerability and thus mutual deterrence. Some have also been concerned that BMD would harm strategic stability by making it possible to launch strategic counterforce blows and then limit damage from the retaliation with a BMD system. Also, they knew during the SDIO era that the technical challenges of protecting against large scale ballistic missile attacks would be more difficult for countries close to the USSR because of shorter flight times for the attacker. As U.S. BMD programs have shifted toward protection from limited attacks and so-called rogue actors, such as Iran and North Korea, these more theological objections have largely fallen away.

Although this section has dealt largely with the problem of extending U.S. deterrence to Europe, much of the discussion also applies to U.S. allies in Asia – Japan, South Korea, and Taiwan. In all these cases the potential adversary included China, as well as the USSR. During the latter part of the Cold War, China seemed less relevant, as American-Chinese relations moved from mutual recognition toward rapprochement. In the case of South Korea, the adversary was chiefly North Korea.

Although U.S. strategic limited nuclear options apply equally well in the Asian deterrence context, there was no parallel to the development of the NATO flexible response doctrine. In South Korea, the United States had theater nuclear weapons that provided for at least the appearance of a strategy of graduated escalation. The United States also believed that it could deter a North Korean attack by mounting a stalwart conventional defense alongside its South Korean allies. Compared to South Korea and Europe, Japan and Taiwan have the advantage of being surrounded by water – a passive defense against a land attack. Also during this period, U.S. tactical aviation capabilities in the theater contributed to deterrence.

In the Cold War, the U.S. extended nuclear deterrence to regions and countries in which its vital national security interests were engaged. In other words, preventing war in these places was worth the risk associated with threats of nuclear punishment. In other places, the United States did not make nuclear threats to underscore deterrence, but rather sought to deter by denial. At the time, proponents of the war in Vietnam argued that the security of South Vietnam was a vital U.S. national security interest, an argument that the post-Vietnam situation demonstrated was not true. Even in the case of Vietnam, the United States did not explicitly threaten nuclear attack against North Vietnam, although there were occasional studies about this possibility.[20]

17 Quoted in Freedman 2003, 333.

18 For a description of the historical background and implementation of SDI see FitzGerald 2001.

19 Numerous arguments by both proponents and critics can be found in Miller/Van Evera 1986.

20 An analysis can be found in Tannenwald 2006. Also, for an example of a contemporary study, see http://blog.nuclearsecrecy.com/wp-content/uploads/2014/07/1967-JASON-Tactical-Nuclear-Weapons-in-Southeast-Asia.pdf.

There were also questions of whether nuclear deterrence worked in Europe or Asia below the threshold of invasion or outright naval or air attack. What about Soviet special forces attacks against ports, airfields, or communications, for example? It is unlikely that these would have provoked a massive response, but more likely a tit-for-tat response.

3 The Post-Cold War Period/Era

With the collapse of the communist regimes in Eastern Europe and the subsequent end of the Soviet Union, relations between Russia and NATO countries became more cooperative in nature. In part because of economic challenges, Russia's military capacities declined markedly. The Soviet threat to Europe effectively vanished. The deterrence structure in Europe was largely dismantled. The United States withdrew the vast majority of its conventional forces, as well as its nuclear weapons, leaving about 50,000 military personnel and a few hundred air deliverable nuclear bombs on European soil. NATO expanded, taking in thirteen new members to date, including all of the non-Soviet Warsaw Pact members plus the three former Soviet Baltic republics. NATO moved further eastwards partially members and Russia moved directly to Russia's western border. A NATO-Russia Council was set up to facilitate consultations between the NATO members and Russia.

Russia remained a potent nuclear power, with both strategic and theater nuclear weapons. Strategic parity between Russia and the United States was codified in a series of strategic arms control agreements, although the numbers decreased. The United States continued to feel the need to deter Russia and continued to plan to retaliate against a Russian attack if needed. Almost certainly, limited options remained part of U.S. planning. Furthermore, the U.S. refused to adopt a no-first-use policy regarding nuclear weapons. It reserved the right to respond with nuclear weapons against non-nuclear attacks if needed. The NATO flexible response doctrine remained intact.

Starting in the early 2000, under the leadership of Vladimir Putin, relations between Russia and the West worsened. The Post-Cold War era effectively ended in 2014 after the Russian seizure of Crimea from Ukraine and Russia's involvement in insurgencies against Ukraine inside Ukraine's eastern territory. The relations between the West and Russia have not reached those of a new "cold war", but they have certainly cooled considerably.

4 Today: The Post-Post-Cold War

Today, the central issue of deterrence remains the same as during the Cold War: how to maintain the credibility of the American threat to employ nuclear weapons in the defense of allies in the face of adversaries that can retaliate with devastating nuclear attacks against the United States itself.

There is little doubt about the threat of the United States or other nuclear powers to retaliate in the event of a nuclear attack against their own homelands, so long as those retaliatory forces can survive the initial attack. The problem is the credibility of U.S. extended deterrence,

Much has changed since the end of the Cold War. Most of those changes work against the credibility of U.S. extended deterrence.

First, the passage of time since nuclear weapons were last employed at the end of Second World War has harmed the political legitimacy of nuclear threats. Major political figures in the West, including President Obama, endorsed the concept of a nuclear weapons free world. He also apparently considered a no-first-use of nuclear weapons pledge, which would have effectively eliminated extending nuclear deterrence against conventional attacks and NATO's flexible response. But this did not happen. At the 2016 NATO Summit, allied leaders in effect endorsed the flexible response doctrine: "NATO has the capabilities and resolve to impose costs on an adversary that would be unacceptable and far outweigh the benefits that an adversary could hope to achieve."[21]

Second, in Europe the geography of defense and deterrence has shifted eastward. No longer are Germany and other Western European nations facing the possibility of invasion by the Soviet Union and its allies. Rather, today five NATO members share a border with Russia. With Russia's recent resurgence, NATO must reckon again with the threat of possible – although geographically limited – invasion. Defense of the three Baltic states – Lithuania, Latvia and Estonia – is especially daunting.[22] These countries have little strategic depth between the Russian boarder and the Baltic Sea and lines of communications for reinforcements are thin. The challenge is that Russia could quickly create a fait accompli on the ground in one or more of these countries and NATO would have no conventional response.

The alliance has recognized this problem and begun to address it by deploying rotational battle groups to the

21 Warsaw Summit Communiqué, July 9, 2016.

22 Shlapak/Johnson 2016.

Baltics. These along with indigenous forces at least provide a "trip wire" deterrent: A Russian attack that killed NATO soldiers, especially American ones, could trigger a retaliation – a first step up an escalation ladder. However, considerably more forward-deployed forces and planning for reinforcements are needed if NATO is to have anything like to near stalwart defense that it had on the central front during the Cold War.[23]

Another problematic aspect of defense and deterrent of the Baltics is the degree to which U.S. (and other) vital national interests are engaged in the Baltics. The United States was surviving perfectly fine when these countries were part of the USSR. But now, wisely or not, the United States and other NATO allies have made a mutual defense commitment to these countries. This, in effect, has created a vital national interest: If the United States and others failed to come to the defense of these countries, the consequences could easily be the unravelling of NATO's mutual defense pact.

Third, the withdrawal of U.S. theater nuclear weapons from Europe and Korea has restricted somewhat the limited nuclear response options of the United States, requiring greater reliance on U.S. strategic nuclear forces. However, there are still dual capable aircraft (DCA) in Europe, both U.S. and allied, which can be equipped with nuclear bombs. Also, conventional attack options have improved with widespread deployment of modern systems that were originally developed for the offset strategy. NATO could choose to escalate war to the adversary's territory, with potentially devastating effect, without resorting to nuclear weapons.

Fourth, the reliance of the military and civilian sectors on space and cyberspace have opened new domains of war.[24] Reconnaissance, surveillance, communications, and intelligence rely heavily on these domains. In many instances, these systems originally were not designed with security in mind. It might be possible to render allied forces and societies deaf, dumb, and blind with attacks on space and information systems. Attacks – for example on communications – could be hard to attribute to an adversary, which could limit retaliatory options. Many of these problems are well known and could be repaired through hardening and redundancy, thus improving deterrence by denial. Response options can also be developed and exercised.[25] Some of these issues, however, need urgent attention.

Fifth, India, Pakistan, North Korea, and perhaps Iran have joined the nuclear club and their nuclear developments could trigger further proliferation. The India-Pakistan problem is largely isolated from U.S. and allied vital interests, except that a nuclear war between the two would be a humanitarian catastrophe and could draw in other countries, especially China. Deterrence in this case is maintained because each could devastate the other in the event of war.

As of this writing, North Korea has perhaps tens of nuclear weapons and was close to achieving the ability to launch nuclear tipped ICBMs at the continental United States. Up to this point, it seems that U.S. extended deterrence on the Korean peninsula has worked to deter the North from trying to conquer the South. Effective deterrence stemmed from two factors. In the case of an attack, the United States could escalate to a nuclear attack on the North without fear of a reprisal. In addition, however, the United States and its South Korean allies would likely win a conventional conflict, albeit with heavy casualties on both sides, leading to the collapse of the northern regime. Both deterrence by punishment and by denial were in place.

The attainment of a North Korean nuclear ICBM capability probably reduces the credibility of the punishment threat. But it does not eliminate it. Moreover, the credibility of the denial capability is probably good enough to deter an attack by the North on the South.

What concerns the U.S. leadership, however, is the possibility that the regime of Kim Jong-Un would threaten to attack or would attack the United States with its ICBMs and force the United States to withdraw from the Korean peninsula. According the deterrence thinking, this threat should be deterred by the United States' manifest ability to massively retaliate against the North. However, according to the U.S. president's National Security Advisor "classical deterrence theory" does not apply to North Korea because of the Kim regime's "unspeakable brutality."[26] If this is so, then the only alternative is for the United States to launch a preventive war to remove the North's nuclear capability and the Kim regime. Because the consequences of a preventive war would be hugely costly in American and South Korean lives, the United States may be self-deterred from initiating hostilities.

Self-deterrence might be ameliorated if the United States had a robust BMD capability that could protect against North Korean ICBMs. But a capability to stop with high confidence ICBMs from hitting the continental Uni-

23 Ibid.

24 Mallory 2018.

25 Ibid.

26 See Friedman 2017.

ted States is probably not yet possible. It would also not prevent a costly war in Korea.

Classical deterrence probably continues to work. It worked against brutal regimes in the Soviet Union and China before. In addition, the Kim regime values its survival above all else; initiating a nuclear war against the United States would guarantee its end. Deterrence may not be a satisfactory answer to this threat, but it may be the only option. Also, it seems more likely that the ICBMs are intended to deter the United States from invading and seeking to overthrow the Kim regime.

The Iranian nuclear program may be temporarily on hold as a result of the agreement known as the Joint Comprehensive Plan of Action (JCPOA). But it could be resumed if the United States pulls out of the JCPOA, as it has threatened or when the agreement expires. Iran continues to develop missile capabilities that would permit it to threaten its neighbors, Israel, and parts of Europe should the JCPOA fail or expire. Similar to North Korea, sooner or later Iran is likely to develop a true ICBM. With such capabilities, Iran could be emboldened to threaten its neighbors, trying to blackmail them or worse.

One answer to this threat is missile defense. Working closely with the United States, NATO is seeking to develop a defense capability to thwart Iranian nuclear missiles. The United States is planning to sell a BMD system to Saudi Arabia. Israel has an active missile defense program. But, as noted earlier, these may be insufficient in times of crisis.

Europe and Israel already have nuclear forces that could retaliate against a nuclear attack by Iran. In the European case, these are largely U.S. nuclear forces that are the essence of extended deterrence. But what about other neighbors who could be threatened – such as the Gulf monarchies, Saudi Arabia, or Egypt? Should the United States extend deterrence to these countries as well, both to deter the Iranians and to forestall the Arab neighbors' acquisition of their own nuclear weapons? Hopefully that question will not have to be answered soon; trying to do so poses several additional difficult questions, such as whether extended deterrence would be credible without forward deployment of U.S. nuclear forces in the region.

Sixth, in Asia the threats have intensified. In addition to the developments in North Korea, China has modernized its military as its economy has swelled. The most important change has been the attainment of a potent anti-access, area denial conventional capability (A2/AD) that have made U.S. forces in the Pacific more vulnerable the nearer they come to China. Taiwan has increasingly fallen under the shadow of Chinese A2/AD capability, complicating planning for the defense of Taiwan. Nevertheless, China does not have, at least not yet, the ability to mount a full-scale amphibious invasion. Also, China would have to reckon with the probability that U.S. forces would join in the defense of Taiwan, with all the escalatory risks that a U.S.-China clash would entail.[27] Deterrence probably still works for Taiwan.

Seventh, and finally and perhaps most importantly, the U.S. President has explicitly raised questions about the value of the United States' alliances in Europe and Asia. During the 2016 campaign, he suggested that Japan and South Korea should no longer rely on the United States but get their own nuclear weapons. In 2017, he initially refused to commit to honor Article 5 of the North Atlantic Treaty, the mutual defense pledge. He later did make that commitment, but his earlier reluctance and his general disdain for America's allies raise obvious questions about the credibility of U.S. extended deterrence.

5 Conclusion

Despite all the challenges to the credibility of nuclear deterrence, one fact remains: credibility can not be eliminated so long as there are nuclear arsenals that cannot be taken out in a first strike. At the beginning of the nuclear age, Bernard Brodie observed "everything about the atomic bomb is overshadowed by the twin facts that it exists and its destructive power is fantastically great."[28] No amount of challenges to credibility can eliminate the possibility that a military attack by an adversary on a nuclear power or on a country under the protection of a nuclear power could cause the unleashing of this fantastically great power and lead to the destruction of the adversary itself. Anyone contemplating such an attack must deal with this possibility. Thus, deterrence endures, despite challenges and with the help of efforts to shore it up.

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27 See Timothy R. Heath: China's Endgame. The Path towards Global leadership. *Lawfare Online*, 5.1.2018 https://www.lawfareblog.com/contributors/theath

28 Brodie 1946.

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