A DOUBLE-EDGED SWORD

Ballistic-Missile Defense and U.S. Alliances

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Alliances and ballistic-missile defense (BMD) are both significant elements of U.S. security policy, but the emphasis on each may be changing. Since the end of World War II, the global network of allies of the United States has been a strategic cornerstone.[1] The Trump administration's *National Security Strategy* reaffirms the vital role of alliances in U.S. security, but President Trump's interactions with traditional U.S. partners suggest a new degree of fluidity in these long-standing relationships.[2] BMD's importance surged in the first half of the Trump administration, particularly after North Korea tested ballistic missiles that could threaten the U.S. homeland. In response, the U.S. Congress increased the Missile Defense Agency's funding by over one-third, from $8.2 billion in 2017 to $11.5 billion in 2018.[3] How might an increased emphasis on BMD affect U.S. alliance relationships?

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U.S. defense policy contends that BMD strengthens alliances. The historical record, however, is mixed. While BMD has bolstered alliances at times, at other times it has exacerbated allies' doubts about U.S. commitment. Why have allies responded so differently to BMD and what are the implications for contemporary U.S. policy? Variations in threat perceptions, relative dependence and vulnerability, and expectations of U.S. commitment could cause an ally to perceive that U.S. BMD increases the risk of abandonment or entrapment—meaning that the United States might either shirk an alliance obligation or drag an

ally into a war, respectively.[4] When determining BMD policy and investments, U.S. leaders should consider not only expected defensive benefits but also how their decisions might affect allies' perceptions of alliance cohesion and credibility.

After providing theoretical background on alliances and the concepts of abandonment and entrapment, this article will review how U.S. policy expects BMD to benefit alliances. It then tests this policy framework against two sets of case studies. The first set examines the earliest U.S. BMD system—Sentinel—in the late 1960s and its impact on alliance relationships with Japan and European NATO allies. The second set considers BMD since the end of the Cold War and again evaluates its effect on the Japanese and NATO alliances, and adds South Korea. The article lastly recommends how these lessons from the past and the present can better inform contemporary U.S. BMD policy.

ALLIANCE THEORY: ABANDONMENT AND ENTRAPMENT

States form alliances to increase their security efficiently. In an anarchic world, states must provide for their own security but often try to minimize costly defense spending.[5] A country typically seeks security by self-strengthening (i.e., building up its own military) and by allying with other nations. Alliances have several potential benefits, such as distributing risk among multiple partners and improving security more quickly and cheaply than self-strengthening.[6] That being said, allies may share the fiscal burden unevenly and alliances often involve other, less tangible costs.[7] For example, a state may sacrifice some political autonomy to gain security in an alliance.[8] A cohesive alliance—one in which its members share common interests and agree on how to achieve them—is more likely to be effective and valuable to its members than one that is not.[9]

The credibility of one ally's commitment to fight for the other or to restrain itself from undesirable adventurism is an essential element of alliance cohesion and effectiveness. An ally that doubts its partner's credibility could fear either abandonment or entrapment.[10] One ally could abandon another by ending the alliance, defecting to a different alliance, or abrogating an alliance commitment. Entrapment, on the other hand, means that one country could drag an ally into a war even if the conflict were contrary to the ally's interests. Some analysts contend that states rarely are entrapped, but more often are subject to *entanglement,* meaning that a state supports its ally in an undesirable undertaking to uphold alliance cohesion.[11] Whether entrapment or entanglement, these related concepts involve one country's fear that sacrificing autonomy to an alliance will expose it to more risk.

If an ally fears that it could be abandoned or entrapped, it might try to mitigate this risk, which then could undermine alliance cohesion, effectiveness, and

efficiency. To counter the risk of abandonment, an ally could discount the alliance's value and offset that loss by self-strengthening or finding new allies. Alternatively, it could increase its own level of commitment to the alliance—or threaten to abandon the alliance—to spur the wavering ally to reaffirm its allegiance. Lastly, it could reduce the need for an alliance by reconciling with its opponent. Similarly, an ally fearing entrapment could preemptively quit the alliance, appease the potential adversary to reduce the risk of an entrapping conflict, or take other steps—such as reducing its own commitment to the alliance—to restrain the ally before it starts an alliance-triggering conflict.[12] If an ally perceives that its partner might abandon or entrap it, alliance cohesion likely would weaken and the pact would become less valuable and credible in the eyes of both members and adversaries.

The late Glenn Snyder, a political scientist at the University of North Carolina, proposed the theory of the "alliance security dilemma" to explain why an alliance member might fear abandonment or entrapment.[13] The security dilemma, on which his theory is based, suggests that actions taken by a state to increase its power and improve its security in turn will make other countries feel less secure, causing them to strengthen their power as well. After this action and reaction, the original state again feels insecure and further increases its power, and so on in a vicious cycle.[14] Snyder proposed that a similar dilemma exists within an alliance. An alliance member likely assesses the cost and risk of being abandoned or entrapped by an ally. Actions to reduce the risk of one outcome are apt to make the other more likely. Doubling down on an alliance commitment may mitigate the risk of abandonment but increase the risk of entrapment. Conversely, loosening alliance ties may avoid entrapment but raise the specter of abandonment.[15] The alliance security dilemma makes it difficult for an alliance to achieve and maintain cohesion, which lies between the two extremes of abandonment and entrapment.

Snyder offered several variables that can determine whether a hypothetical alliance will be cohesive or a member will fear abandonment or entrapment. These factors include the extent of shared interests, one ally's dependence on the other, and the explicitness and credibility of the alliance commitment. First, Snyder defined *interests* as whether allies share common objectives and a common opponent. Overlapping interests minimize the risk of abandonment or entrapment. Second, relative dependence measures how much one ally needs the other's support—and how each partner perceives this dependency. A country is more likely to fear abandonment if it perceives itself as being highly dependent on its ally, while that ally is less dependent on it. Third, commitment combines both the degree of promised support stipulated in an alliance agreement and also the credibility of that on the basis of the ally's past behavior and reputation, as well as

one country's judgment about its ally's expected future behavior.[16] Snyder's model of interests, dependency, and commitment may help assess how allies perceive U.S. BMD capabilities.

Arguably, missile defense affects how allies view the credibility of U.S. alliance commitments.[17] To gauge how and why U.S. BMD capabilities might influence allied fears of abandonment or entrapment, this article adapts Snyder's variables to the BMD context. First, discussions of allies' shared interests should incorporate their threat perceptions. For instance, if allies do not agree on the importance or imminence of a missile threat, this divergent perception likely would reduce perceived mutual dependence and commitment, spurring fears of abandonment. Second, calculations of relative dependence should consider whether BMD technology and its ostensible benefits are restricted from, available to, or even networked with an ally. An ally's access to BMD's defensive benefits not only affects its dependence on the United States but may change the relative vulnerability between the United States and its ally. Just as Snyder predicts that a high variation in dependence contributes to fears of abandonment, these differences in how BMD technology is employed and shared could affect an ally's assessment of its dependence and relative vulnerability, thereby bolstering or weakening perceptions of the likelihood of abandonment. Modern BMD systems, some of which depend on cross-border sensor networks and forward-deployed weapons, could reduce perceived differences in dependence and vulnerability, thereby lessening abandonment fears but possibly raising entrapment risks. Lastly, U.S. allies could regard U.S. BMD policy and deployment decisions as indicators of U.S. alliance commitment. For example, basing U.S. BMD systems in an allied country might send a signal of strong U.S. commitment, while enlarging BMD systems in the continental United States and also reducing overseas troop deployments might send the opposite signal.

After reviewing the theoretical foundation of alliances, this article next examines the expected benefits of BMD to U.S. alliance relationships.

POLICY PERSPECTIVE: BMD IMPROVES ALLIANCE RELATIONSHIPS

Contemporary U.S. policy identifies three reasons why U.S. BMD capabilities should improve alliance relationships. First, BMD protects U.S. military capabilities at home and abroad, which should reassure allies that the United States will be able to fulfill its commitments. Second, BMD directly benefits allies by defending their forces, people, and territories. Third, BMD opens up new avenues for military integration and industrial cooperation with allies. Official policy documents across recent presidential administrations highlight these three benefits.

Similarly, the academic and policy analysis communities also widely, but not universally, describe a constructive relationship between BMD and U.S. alliances.

The 2002 *National Policy on Ballistic Missile Defense,* issued by the George W. Bush administration, argued that BMD capabilities would reassure allies, defend them, and encourage international defense cooperation. First, fielding BMD capabilities would "devalue missiles as tools of extortion and aggression," preventing a ballistic-missile-armed state from using those weapons to forestall U.S. intervention on behalf of an ally, thus enhancing the credibility of U.S. deterrence and alliance commitments. Second, BMD would protect "not only the United States and deployed forces, but also friends and allies" against the widely proliferated missile threat. Finally, the United States should encourage allies to help develop BMD technologies.[18] This three-pronged perspective on how BMD should benefit alliances continued into the Obama and Trump administrations.

The Obama administration's 2009–10 Ballistic Missile Defense Review again emphasized that BMD could improve U.S. alliance relationships.[19] It asserted that BMD is "integral" to pursuing "collaborative approaches with allies and partners" and again highlighted three benefits of BMD to U.S. alliances. First, BMD would reassure allies that the United States will uphold its alliance commitments despite the increased ballistic-missile threat. Second, BMD would protect allied population centers and essential military capabilities. Finally, the United States would both share and codevelop BMD technology with U.S. allies.[20] The Bush and Obama BMD policies demonstrate a consensus about BMD's potential to benefit alliance relationships that has extended across U.S. presidential administrations and political parties and has continued into the Trump administration.

Trump administration policy has affirmed the importance of BMD to national security and shared the view that missile defense benefits U.S. alliances. The 2017 *National Security Strategy* describes the threat that advanced missiles pose to the United States and its allies and advocates improving U.S. and allied missile-defense capabilities.[21] The 2019 *Missile Defense Review (MDR)* notes that "missile defense plays an increasingly important role in . . . reinforcing the indivisibility of U.S. and allied security" by protecting allies, assuring them of U.S. commitment, deterring attacks, and creating opportunities for cooperation and burden sharing.[22] Consistent with these policy documents, the Trump administration has continued to cooperate closely with allies on missile defense. Examples include deploying Terminal High Altitude Area Defense (THAAD) missile-defense batteries to South Korea, successfully testing the SM-3 Block IIA missile codeveloped with Japan, and improving missile-defense capabilities in Europe.[23]

Some scholars and policy analysts agree with this political consensus but also suggest other ways BMD should strengthen U.S. alliances. Brad Roberts (of

Lawrence Livermore National Laboratory and a former Obama administration official responsible for missile defense) argues that BMD benefits alliance ties by demonstrating U.S. resolve, reducing the political pressure to escalate a conflict prematurely, and constraining an opponent's ability to use ballistic missiles as a coercive tool.[24] Stephan Frühling of the Australian National University points out that because of BMD's defensive nature, the United States can employ it to demonstrate alliance commitment in a "generally non-threatening manner."[25] Roberts and Frühling also both assert that BMD bolsters the credibility of U.S. extended deterrence, referring to the commitment to use nuclear weapons in defense of certain allies.[26] Amy Woolf of the Congressional Research Service adds that BMD capabilities can protect critical infrastructure abroad, can ensure that the United States can deploy forces in defense of an ally, and can help form or maintain coalitions. As an example, during the 1991 Persian Gulf War, deployed Patriot batteries both defended key installations in Saudi Arabia and helped restrain Israeli retaliation against Iraqi missile attacks.[27] However, Ted Postol, a physicist at the Massachusetts Institute of Technology and a BMD skeptic, asserts that some of the political benefits of BMD to U.S. allies during the Gulf War were merely "serendipitous" rather than a repeatable outcome.[28] Yet despite some such dissenting views, there appears to be broad agreement that BMD contributes to alliance cohesion.

U.S. BMD policy across recent administrations has argued consistently that BMD benefits U.S. alliances. Although U.S. strategists intend for BMD employment at home or abroad to benefit U.S. alliances, this article next will analyze allies' perspectives on U.S. BMD to see whether their perceptions match with or differ from U.S. policy expectations.

HISTORICAL PERSPECTIVE: ALLIES' MIXED RESPONSES TO U.S. BMD

Case studies from two different eras of U.S. missile defense offer the opportunity to test the theory that BMD strengthens alliance relationships, and they reveal that BMD has not always improved these ties. The first period begins with deliberations about deploying the Sentinel antiballistic missile (ABM) system in 1965 and ends with the 1972 ABM Treaty. Although BMD technology and the international security environment of the 1960s do not compare cleanly with contemporary circumstances, U.S. government documents from this period shed light on internal debates and decisions.[29] The second period begins with U.S. withdrawal from the ABM Treaty in 2001 and continues to the present, permitting analysis of modern missile defenses in a contemporary technological and strategic setting.

This article assesses the bilateral U.S.-Japan alliance and the multilateral NATO alliance in both time frames and adds the U.S.–South Korea alliance in

the second period. Cold War scholar Michael Mandelbaum has described the U.S.-Japan alliance and NATO as the world's only "nuclear alliances"—alliances in which the United States has committed to employing nuclear arms in their defense.[30] That these alliances depend on nuclear deterrence makes BMD particularly relevant to alliance cohesion, either by providing some protection from a nuclear attack or by defending U.S. nuclear retaliatory capabilities. The second period adds South Korea because U.S. nuclear deterrence also pertains to this alliance and the 2017 deployment of THAAD to South Korea provides insight into modern entrapment risks.[31]

Pre–ABM Treaty (1965–72)

On 18 September 1967, Secretary of Defense Robert S. McNamara announced President Lyndon B. Johnson's decision to field Sentinel, an ABM system intended to defend U.S. territory against the anticipated threat of a small number of Chinese nuclear-armed intercontinental ballistic missiles (ICBMs).[32] The Johnson administration described Sentinel as a "thin" defense, meaning it would protect large areas of the United States against a small number of missiles.[33] Sentinel would have employed nuclear-armed interceptors. Existing guidance technology was not accurate enough to use either a conventional high-explosive or kinetic ("hit-to-kill") warhead like the one that modern BMD interceptors use.[34]

While the debate within the Johnson administration about Sentinel largely weighed its limited military use against domestic political considerations, U.S. policy makers also evaluated its likely impact on alliance relationships.[35] U.S. government documents exhibit how U.S. officials expected allies to respond to ABM deployment. The limited scope of the ballistic-missile threat, Sentinel's U.S.-exclusive nature, and how this decision interacted with other signals of alliance cohesion complicated U.S. efforts to assure allies that this new capability did not signal a change in Washington's security commitments. Sentinel generally benefited relations with Japan but sparked fears of abandonment among many NATO allies.

In the 1960s, nuclear arms and ICBMs were new technologies that had not proliferated widely yet; only one major nuclear power, the Soviet Union (USSR), and one emerging nuclear state, the People's Republic of China, concerned the United States. By 1965, U.S. observers believed that the USSR had over two hundred ICBMs, so the Soviet arsenal already was too big to defend against cost-effectively.[36] McNamara noted that "any ABM system can rather obviously be defeated by an enemy simply sending more offensive warheads or dummy warheads than there are defensive missiles capable of disposing of them." He projected that developing a Soviet-oriented ABM system would lead to each side spending more on defenses, only "to be relatively at the same point of balance on

the security scale that we are now."[37] According to his analysis, the limited security gained by a "heavy," or high-capacity, anti-Soviet ABM system would not be worth the expense.

Mindful of the limitations of ABM capabilities, U.S. policy makers instead designed Sentinel as a "thin," or relatively low-capacity, defense against the anticipated Chinese threat. U.S. government analysts believed that China was not yet developing ICBMs but was likely to have a small number of them by 1975.[38] Because of America's overwhelming nuclear superiority, McNamara asserted that it would be "insane and suicidal" for China to attack the United States, but by deploying a "Chinese-oriented ABM . . . we wish to reduce such possibilities to a minimum." He further argued that Sentinel would "indicate to Asians that we intend to deter China from nuclear blackmail," hinting at potential benefits to U.S. credibility.[39]

Sentinel was exclusive to the United States. Allies gained neither protection from ballistic missiles nor opportunities for industrial cooperation.[40] Washington considered Sentinel to be too costly and complex for allies and infeasible to deploy overseas. Allies were geographically too close to the threats, meaning that a forward-deployed ABM system would not have enough reaction time to work effectively.[41] Furthermore, the interceptors' nuclear warheads raised significant command-and-control challenges and introduced risk that an ally could modify ABM interceptors into nuclear-armed ballistic missiles. Mindful of how allies might recoil against ABM restrictions, a State Department official said in a 1967 meeting with the Chairman of the Joint Chiefs of Staff that U.S. policy was "to discourage decisions by friendly countries in favor of an ABM defense—but to do so in a manner that would avoid damage to our relations with those countries."[42] This approach essentially sought to limit the political impact of restricting missile defense from allies by dodging the topic rather than meaningfully consulting with valued partners.[43]

In this period, U.S. policy makers could not determine whether ABM defense improved or undermined allies' perceptions of U.S. commitment. A 1965 State Department study on the "possible political and psychological effects" of such a system suggested that NATO allies could view it either as "underwriting U.S. willingness to fulfill its commitments" or as "lending credence to the Gaullist view that the U.S. is not really fully committed to Europe." This analysis was also of two minds about Asian responses. Creation of defenses against a Chinese nuclear attack, in the form of an ABM system, might cause Asian countries to "conclude that the U.S. would stand by its commitments."[44] Conversely, "it might appear that the U.S. did not place a sufficiently high value on its commitments to warrant risking even a limited nuclear attack," and ABM deployment might inflate perceptions of China's threat in Asia unnecessarily.[45]

The Department of Defense also studied likely allied responses to Sentinel. In May 1967 the Joint Chiefs of Staff assessed that allies would view the ABM decision in the context of U.S. efforts to increase allied defense participation and reduce "US involvement abroad (particularly in Asia)." If allies perceived that the United States was "beginning to look more inward than outward," they might view ballistic-missile defenses negatively. "To European and Japanese thinking only in terms of their own protection, a project to 'defend the United States' may have little realistic appeal, unless they can be convinced that a system which protects the strategic war making capability of the United States also helps deter a strike against their own countries." The report concluded that Japan, whose "strategic views . . . are less fixed than those of the Europeans," would be interested in ABM technology and would appreciate that "such a system might make the United States less susceptible to Soviet or Communist Chinese nuclear blackmail." In Europe, however, a decision to deploy an ABM system "would unnerve NATO," and "further undermine European confidence in US intentions to fulfill its nuclear commitments to the Alliance."[46] The upcoming sections demonstrate that this analysis proved prescient: Japanese leaders felt that ABM deployment would benefit alliance cohesion, while ABM heightened abandonment fears among many European NATO allies.

Japan: BMD and U.S. Credibility. Japanese policy makers believed the U.S. ABM program would strengthen alliance cohesion and responded favorably to American plans. Their reaction stemmed from shared threat perceptions, the limited effect of any ABM deployment on the already-high mutual dependence between the two countries, and other signs of Washington's commitment that Tokyo valued more highly.

Bilateral ABM discussions and Japan's reactions to China's nascent nuclear capability indicate that in the mid-1960s Japan and the United States assessed the Chinese threat similarly. Starting as early as November 1965, U.S. and Japanese diplomats and military officers routinely discussed the future Chinese nuclear threat, ABM defense, and its implications for the alliance.[47] Reflecting their concern about the Chinese threat, senior Japanese defense officials asked whether ABMs could be used against shorter-range Chinese missiles that could strike Japan, and asked for "data for use in planning anti-missile defenses," even though "they would require deployment of nuclear weapons on Japanese soil."[48] Because of the warheads involved, U.S. participants discouraged such planning. In 1966, the U.S. Central Intelligence Agency reported that China's successful nuclear weapons tests had made the "Chinese Communist threat to Japan credible," and Japan's "leading papers . . . for the first time unanimously [warned] of the possible Chinese menace to Japan's security."[49] Furthermore, in an internal Japanese

government report (referred to as the *1968/70 Report*) leading nuclear experts warned that future Chinese nuclear capabilities could both threaten Japan and weaken the credibility of U.S. extended deterrence.[50] These analyses suggest that both Japan's political leaders and the public likely viewed China's nuclear capability as threatening, which aligned with the U.S. perspective.

Japan highly depended on U.S. security guarantees, and plans to field Sentinel did not change this circumstance dramatically, especially at a time when many other issues played a more important role in the relationship. The 1960 mutual defense treaty between the two countries included extended deterrence under the so-called U.S. nuclear umbrella. Even if Japanese leaders doubted U.S. credibility, the authors of the *1968/70 Report* concluded, they had no better alternative than to rely on U.S. extended deterrence.[51] Furthermore, Japan's rehabilitating economy and peace-oriented constitution limited its options for military modernization and prohibited it from pursuing nuclear weapons.[52] Several other significant events in the late 1960s encouraged close communication and cooperation between Tokyo and Washington rather than one-sided dependence. These catalyzing events included Japan's efforts to recover Okinawa, the increasing involvement of the United States in the Vietnam War, the renegotiation of the 1960 treaty, and the U.S. desire for Japan to assume a larger role in East Asian security.[53]

From an alliance-management perspective, the ABM question created opportunities to consult with Japan and treat it as a valued security partner, not just a client. Although the United States would not share ABM technology with Japan, the United States provided detailed information about ABM capabilities and U.S. intentions. In May 1967, the U.S. ambassador to Japan met with the vice-ministers of Japan's foreign ministry and its defense agency to discuss technical details concerning ABMs and to explain the rationale for U.S. deployment decisions. One U.S. military participant was surprised by the frank conversations and the technological details that U.S. participants provided. "I was impressed (amazed) at the amount of substantive material and discussion given by our side at this meeting."[54] Open communication with an ally, particularly on sensitive subjects, can buttress alliance cohesion, and may have had that effect on the Japanese in this case.[55]

In these meetings, Japanese policy makers explicitly stated their belief that ABM deployment would strengthen the credibility of U.S. commitments, but also noted that it was not a very important factor. In May 1967, Vice-Minister Nobuhiko Ushiba of the foreign ministry said that Japan "believed that a U.S. ABM deployment would enhance the credibility of the U.S. deterrent."[56] In August 1967, only weeks before McNamara's Sentinel announcement, Vice-Minister Yoshio Miwa of the Japan Defense Agency reaffirmed to U.S. ambassador U. Alexis Johnson that Sentinel "would increase U.S. credibility," but reminded

him that Japan still considered the "deterrent power of the U.S." to be the "most effective method to protect Asian countries." Johnson then asked Miwa and his foreign ministry counterpart, Vice-Minister Ushiba, what the United States could do "to maintain its deterrent capability." Ushiba replied that "repeated assurances on suitable occasions" were more important than an ABM system itself, and emphasized the point by saying, "We believe your words."[57] Public pronouncements that the United States would defend Japan bolstered its confidence in U.S. defense commitments.[58] Japan had full faith in U.S. alliance commitments. An ABM system might have strengthened Japan's perception of U.S. credibility, but it was not the most important factor.

Shared threat perceptions, high-but-constant mutual dependence, and faith in U.S. security commitments all contributed to Japan's acceptance of U.S. Sentinel ABM plans and to some degree bolstered Japan's assessment of the U.S. commitment. This outcome roughly matches what modern U.S. BMD policy expects. NATO allies, on the other hand, reacted negatively to Sentinel.

NATO: Fear of "Fortress America." Western European NATO allies, particularly the nuclear-armed United Kingdom, believed that U.S. ABM plans increased the risk of U.S. abandonment in the face of a Soviet attack. Allied concerns stemmed from differing threat perceptions, expected changes in mutual vulnerability, and broader concerns about the credibility of U.S. commitments.

Many Western European NATO members—including both of the nuclear-armed allies (the United Kingdom and France) and West Germany—were concerned that the United States might prefer to defend itself from a Soviet strategic strike rather than deter an attack on European allies with a credible guarantee of U.S. nuclear retaliation.[59] U.S. BMD by itself may have increased allied perceptions of U.S. credibility, but NATO allies expected that U.S. deployment of an ABM system coincident with countervailing Soviet defenses would have the opposite effect.

Western European governments and policy analysts were leery of Sentinel's expected deployment. As early as July 1965, the U.K. Foreign Office assessed that ABM deployment would not upend the "balance of deterrence" between NATO and the Soviet Union but might "tilt it and thus increase tension and instability." It warned that the "disparity between Europe and the two super-powers would be increased to the disadvantage of Europe" and that U.S. ABM deployment would "strengthen the hand of Gaullists and would be unhealthy for the Atlantic Alliance."[60] A month after this analysis, Britain's ambassador to the United States warned Secretary of State Dean Rusk that the ABM decision was "likely to have important consequences" for "the position of Europe within the Western Alliance."[61] Summarizing European worries, Johan Holst, a Norwegian defense

analyst who was later Norway's minister of defense and minister of foreign affairs, wrote that ABM deployment "might look like an expression of American neo-isolationism, a return to Fortress America based on self-defense without entanglements." Holst acknowledged that if the United States alone had BMD that might "strengthen the alliance by adding potency to the U.S. guarantee," but the dual fielding of U.S. and Soviet BMD systems, he argued, "might on balance also be perceived as reducing the validity of the [U.S.] guarantee."[62] These concerns about U.S. ABM plans likely were rooted in divergent perceptions of the ballistic-missile threat.

NATO allies disagreed with the U.S. assessment of the Chinese strategic nuclear threat. Britain's Foreign Office concluded that a nuclear war with China was "not at present on the cards [*sic*]."[63] Some European analysts, such as Britain's Laurence W. Martin, then believed that American fears of "China's embryonic nuclear force" were "hysterical and dangerous" and "exaggerated."[64] Others suspected that the U.S. focus on the Chinese threat was a pretext to field an ABM system that would grow from a thin system into a larger, heavy one that could defend the United States against the Soviet ICBM threat.[65] Even if the Chinese threat was not a duplicitous justification, some European observers thought that, as ABM technology improved, U.S. political leaders would not be able to resist future U.S. domestic pressures to build a heavy system that would affect European security more negatively.[66] Additionally, because the United States withheld ABM technologies from NATO allies, the system offered them no security from Soviet nuclear and conventional forces arrayed against Western Europe.

Although the Soviet Union posed different threats to the United States and Europe, without missile defenses the United States and Europe faced similar levels of risk. Sentinel changed this perception of shared vulnerability. A 1967 report on European views of Sentinel by the State Department's Bureau of Intelligence and Research (INR) noted that "many in Europe believe . . . that the advent of this new military technology . . . will result in greater difference in the degree of security enjoyed by countries on the two sides of the Atlantic, to the disadvantage of Western Europe." Parallel ABM deployments in the Soviet Union could exacerbate this change in relative vulnerability. Helmut Schmidt, then a parliamentary leader of West Germany's Social Democratic Party and later West Germany's chancellor, opposed any ABM deployment for this reason. According to the 1967 INR report, he thought that such a course "would lead to a rapid erosion of both the NATO and Warsaw Pacts" because the superpower in each alliance might become more comfortable with the idea of defending itself rather than keeping its deterrence commitments. He also thought that this gap between the United States and the Soviet Union, as ABM-capable states, and the other countries in Europe "would

cause a crisis of confidence on the part of the [Western European countries] about the [U.S.] nuclear guarantee."[67]

This concern that BMD might change the relative vulnerability between the United States and its European allies was not limited to European political leaders but likely was shared by some members of the public. European newspapers exhibited similar anxiety about the advent of U.S. and Soviet BMD. An editorial in Hamburg's *Die Welt* opined that "[a] Europe sandwiched between the two ABM-equipped world powers is confronted with the alternatives of continued nuclear protection by the respective superpowers—a protection that implies increased dependence—or of withdrawing this protection." A writer in the *Frankfurter Allgemeine* claimed that the expected deployment of ABM systems would "accentuate the differences between the haves and have-nots and increase fears among the latter."[68] An article in France's *Le Monde* identified the challenge the ABM concept posed to France's and Britain's small nuclear deterrents: "The advent of the ABMs has every chance of limiting the strategic [nuclear] game to the very big powers."[69] According to these perspectives, the advent of an ABM system would improve U.S. defenses while simultaneously undercutting Western Europe's, thus significantly changing Western European perceptions of the relative vulnerability between the United States and Europe.

Broader fears of a "decoupling" between European and American interests, combined with sparse consultation with NATO allies about ABM policy, worsened Western European worries of U.S. abandonment. In the early years of the Cold War, the U.S. promise of extended deterrence was credible partly because the United States based nuclear weapons in Europe, from which they could better reach Soviet targets.[70] The development of U.S. strategic weapons, such as the Minuteman ICBM and the Polaris submarine-launched ballistic missile—which could be launched from U.S. territory or the open ocean, respectively—meant that the United States could remove some of its weapons from Europe. The United States still pledged to use nuclear weapons in response to a Soviet attack on Europe, but the shrinking U.S. nuclear presence in Europe heightened allied doubts.[71] The decision to deploy an ABM system exacerbated the sense that the United States was weakening its nuclear commitment to Europe's defense.[72] Additionally, despite some ABM discussions with the United Kingdom in 1966, the United States consulted with other NATO allies only days before McNamara announced Sentinel.[73] This approach effectively forced a controversial issue on the alliance as a fait accompli and—in contrast to the approach taken with Japan—appeared to European observers to be a deliberate snub of alliance consultative processes, which European allies valued as a symbol of transatlantic solidarity.[74]

Divergent threat assessments, changing perceptions of relative vulnerability, and wariness about U.S. security commitments all contributed to European allies' fears that the United States might abandon its nuclear commitments. This outcome does not align with what modern U.S. BMD policy expects, and contemporary analysts should appreciate that allies could again perceive U.S. BMD investments as increasing the risk of abandonment, particularly if threat assessments differ, relative vulnerability changes inequitably, or other factors compound allied doubts about U.S. commitment. Noting but skipping over the era of the ABM Treaty (1972–2001), this article next will examine several modern case studies.

Modern BMD (2001–Present)

Sentinel and follow-on U.S. ABM systems affected U.S. alliances less than first expected because the 1972 ABM Treaty between the United States and the Soviet Union curtailed ABM efforts. The treaty limited the size and scope of ABM systems and imposed constraints on future research and development. It also distinguished between strategic and theater ballistic-missile defenses, restricting the former more tightly.[75] By defending the United States against a long-range ICBM threat, Sentinel would have been considered a strategic system, while a shorter-range system such as the modern Patriot missile would have been classified as a theater defense. By limiting the United States and the Soviet Union to no more than one hundred strategic ABM weapons, the treaty emphasized the importance of nuclear deterrence rather than missile defense.[76] Within a few years, the United States abandoned its ABM program and did not field strategic BMD systems again until after President George W. Bush withdrew from the ABM Treaty in December 2001.[77]

The Bush administration withdrew from the treaty partly because of the changing ballistic-missile threat.[78] Unlike in the 1960s, contemporary ballistic-missile threats were diversifying and proliferating. Modern conventionally armed ballistic missiles were increasingly attractive alternatives to manned strike aircraft because they were cheaper to produce or purchase, required less expertise to employ, and were difficult to defend against.[79] No longer simply a weapon in the nuclear superpower standoff, in the post–Cold War environment ballistic missiles posed a worldwide challenge to the United States and its allies.[80] Today, over thirty countries have ballistic missiles with ranges greater than 150 kilometers.[81]

Over recent decades, BMD has broadened to include not only defending the continental United States from ICBMs (homeland defense) but also protecting deployed U.S. forces and allies from ballistic missiles with shorter ranges (regional defense). U.S. *homeland defense*—like strategic defense before it—focuses on defending against countries such as North Korea and Iran that have, or might in the future have, small numbers of ICBMs, rather than against countries with

larger nuclear arsenals, such as China or Russia.[82] A network of land-, sea-, and space-based sensors support this mission.[83] The ground-based interceptor (GBI) would be used to defend against ICBMs, but only forty-four are fielded, and they have had mixed success in live-fire tests.[84] To borrow terms from the Johnson administration, one could best describe U.S. homeland defense as a thin rather than a heavy system.

Regional defense employs a range of sensors and weapons to defend deployed forces and allies against shorter-range threats in the midcourse and terminal phases of flight. *Midcourse defense* involves intercepting missiles while they are outside the atmosphere. *Terminal defense* means intercepting a ballistic missile as it descends toward its target.[85] Some USN ships with the Aegis combat system and AN/SPY-1 radar are BMD capable and can employ SM-3 and SM-6 interceptors against targets in the midcourse and terminal phases, respectively. The U.S. Army has BMD sensors such as the AN/TPY-2 radar and weapons such as the THAAD and Patriot missile systems for terminal defense. These Navy and Army weapons use either conventional explosive or kinetic—so-called hit-to-kill—warheads.[86] Notably, some of the regional BMD sensors, such as the shipborne AN/SPY-1 or the land-based AN/TPY-2, also can provide U.S. homeland defenses with earlier detection and tracking of an incoming missile.[87]

BMD no longer is an exclusive U.S. capability. It is now accessible to and even networked with U.S. allies, many of whom face ballistic-missile threats and have acquired or developed missile defenses. The United States encourages allies to participate in BMD efforts and advocates interoperability across national systems.[88] Nineteen individual nations and the NATO alliance cooperate with the United States on BMD. This cooperation has included pooling research-and-development efforts, acquiring interoperable BMD systems, hosting U.S. BMD systems, and coordinating operational employment.[89] The 2019 *MDR* emphasizes the importance of "interoperability among various [U.S. and allied] missile defense capabilities, to include command and control networks, sensors, and [integrated air and missile defense] systems."[90] A ballistic missile's speed, altitude, and range limit the time available for detection, tracking, and interception.[91] The United States tackles this challenge by sharing information among different sensors and interceptors to improve engagement opportunities and by conducting deliberate planning and decentralizing decision-making to shorten engagement timelines.[92] Cooperation with interoperable allies could improve both U.S. and allied defenses further by broadening sensor coverage, increasing the number of available interceptors, and planning and executing combined defenses better.

Similarly to the pre–ABM Treaty period, modern BMD's effect on U.S. alliance relationships appears closely related to shared threat perceptions, relative dependence and vulnerability, and other signs of U.S. commitment. In Japan,

these factors arguably have enabled BMD to overcome Tokyo's fear of entrapment and strengthen the U.S.-Japan alliance. In South Korea, cross-border BMD integration has raised fears of entrapment. In Europe, as the United States began fielding modern BMD systems there, some NATO allies initially were wary of abandonment, but as the threat evolved and U.S. deployment plans changed these fears subsided.

Japan: Overcoming Entrapment Fears and Embracing BMD Cooperation. U.S. policy suggests that BMD demonstrates America's commitment to work with and defend allies around the world. Recent experience with Japan supports this argument. Japan and the United States similarly perceive the ballistic-missile threat, BMD increases the overall dependence between the two countries while also evenly reducing vulnerability, and forward-deployed BMD forces tangibly demonstrate U.S. commitment to Japan's defense. As a result, U.S. BMD capabilities appear to have improved the U.S.-Japan alliance.

Japan has worked closely with the United States on BMD since the late 1990s, but its policy makers initially worried about entrapment risks. China's 1996 missile exercises near Taiwan and North Korea's missile testing in 1998 demonstrated Japan's vulnerability to ballistic missiles.[93] By 2001, Japan's Defense Agency identified BMD as "an important issue for Japan's defense policy" but underscored the importance of "[tackling] the issue independently."[94] Because modern BMD systems typically are networked, Japan feared that closer BMD cooperation with the United States might cause Japan to become embroiled in other regional conflicts—such as in South Korea or Taiwan—even if it was not attacked directly.[95] Defending another country also would have been inconsistent with Japan's constitutional prohibitions against collective self-defense.[96] The government of Japan announced its intentions to introduce BMD systems in December 2003, but the announcement reflected its concern that BMD might lead to entrapment, or at least the appearance of participating in collective self-defense. Japan underscored that the BMD system would defend only Japan (not so-called third countries) and would "be operated on Japan's independent judgement, . . . based on the information . . . acquired by Japan's own sensors."[97] This emphasis on BMD independence waned, however, as the ballistic-missile threat to Japan increased.

More recently, shared threat perceptions drove Japan to cooperate closely with the United States on missile defense. Regional ballistic-missile capabilities, primarily in North Korea and China, have improved steadily, and the United States and Japan both consider these weapons to be threats.[98] As a result, Japan no longer hesitates to integrate with U.S. systems. According to Japan's 2016 defense white paper, "Further cooperation with the U.S. government including the U.S. Forces in Japan is necessary for efficient and effective operation of the BMD

system," to include "real-time sharing of BMD operational . . . information."[99] A strong, shared threat perception likely stimulated the alliance relationship.

The United States and Japan have robust joint BMD capabilities, which improve the security of both countries to a similar degree and increase their dependence on each other.[100] BMD-capable USN ships are based in Yokosuka, Japan, and regularly exercise with Japan's own BMD-capable destroyers.[101] The United States and Japan collaboratively developed the SM-3 Block IIA, an advanced, midcourse, regional defense interceptor that both navies use.[102] The United States has placed two AN/TPY-2 radars in Japan that provide information to U.S. regional and homeland-defense systems and also share data with Japanese defenses.[103] Japan also employs U.S.-designed Patriot PAC-3 missiles and plans to purchase two Aegis Ashore systems, a land-based adaptation of a naval BMD capability.[104] Furthermore, Japan has taken steps to coordinate BMD operations better with the United States, such as establishing a Japan-U.S. Bilateral Joint Operation Coordination Center (BJOCC) at Yokota Air Base, near Tokyo.[105] Within the limits of Japan's defense budget and political will, this close technical and operational BMD cooperation enables it to benefit from BMD to a similar extent to the United States.

Forward-deploying U.S. BMD forces to Japan also strongly signals U.S. commitment. According to the late political scientist Thomas Schelling, stationing U.S. forces abroad communicates U.S. commitment beyond even their military utility. Forward-deployed forces, particularly in a geographically constrained and isolated area such as Japan, may act as a "trip wire." If another country attacked Japan, these U.S. forces would come under attack as well, which would make it politically difficult for the United States to fail to intervene. Furthermore, defensive forces such as missile defenses place the onus on an opponent to take the initiative and go on the offensive—likely ceding the moral high ground to the United States and its allies.[106] The presence of U.S. forces that include BMD capabilities should deter an opponent from attacking and reassure Japan that the United States is likely to follow through on its alliance commitments.

South Korea: Mitigating Entrapment Risks. As in Japan in the early years of last decade, U.S. BMD capabilities have elicited fears of entrapment in South Korea. South Korea and the United States long have viewed North Korea's ballistic missiles as a threat, but North Korea's numerous successful missile tests in 2017 increased South Korea's concern to such an extent that it permitted the United States to complete its politically controversial THAAD deployment.[107] Despite this shared threat perception, concern about dependence on the United States, the risk of unintended cooperation with Japan, and expectations of U.S. behavior all likely added to South Korea's worry that U.S. BMD could result in entrapment.

Entrapment and entanglement concerns have shaped South Korean leaders' perceptions of BMD since at least 1999, when Seoul declined to participate in nascent U.S. BMD efforts, partly because the effort might have damaged relations with Beijing.[108] The recent U.S. deployment of the THAAD system to South Korea revived this concern.[109] China argues that THAAD's AN/TPY-2 radar is part of America's homeland-defense sensor network and thus threatens China's limited nuclear deterrent, thereby leaving China vulnerable to U.S. nuclear coercion.[110] Beijing retaliated against Seoul for agreeing to host THAAD by imposing unofficial economic sanctions, including boycotts of popular Korean bands and reduced Chinese tourism.[111]

The structure of U.S. alliances in East Asia also likely affects Seoul's fear of BMD-enabled entrapment. BMD integration could expose South Korea to entanglement with Japan, the other major ally of the United States in Northeast Asia. Victor Cha, a Korea expert at the Center for Strategic and International Studies, describes South Korea and Japan as quasi allies because they share the United States as a common ally but are not allied themselves.[112] Although the United States encourages closer defense cooperation between the two countries, animosity rooted in Japan's decades-long occupation of Korea in the early twentieth century inhibits closer alignment.[113] Because U.S. and Japanese BMD systems are integrated with each other already, adding South Korean BMD sensors and weapons into this network could support the defense of Japan directly, or alternatively could cause South Korea to depend on Japanese systems to defend itself. Either outcome likely would be unwelcome in South Korea, which is loath to cooperate with Japan.[114]

To mitigate these risks of entrapment or entanglement, in 2006 Seoul began developing the Korean Air and Missile Defense (KAMD) as an alternative to U.S. BMD systems.[115] Referring to KAMD, South Korea's defense minister said in 2013 that "we will not join the U.S. missile defense system, but take our own path." KAMD includes a mix of domestic and international components, such as an Israeli-made early warning radar, the U.S. Aegis BMD-capable naval weapon system, and South Korean and U.S. interceptors.[116] Economic motivations also shaped KAMD. South Korea purchased some secondhand weapons to reduce costs and bought some domestic equipment to spur its defense industry.[117] Despite these efforts at independent BMD, some South Korean analysts remain skeptical about the distinction between KAMD and U.S. BMD systems, positing that "it is only a matter of time" before KAMD is "integrated into the U.S.-led efforts to create ballistic missile defense in the Asian-Pacific region."[118]

Despite these concerns, South Korea recognizes the importance to its defense of interoperability with U.S. systems. Despite Seoul's efforts to minimize the risks of entrapment or entanglement, South Korea continues to cooperate with

the United States on other BMD efforts, such as participating in multinational (United States, Japan, and South Korea) naval BMD exercises and building three BMD-capable warships incorporating the U.S. Aegis combat system.[119] In the future Seoul could determine that the security benefits of closer BMD integration with the United States may outweigh the entrapment risks. Furthermore, KAMD maintains optional interoperability with the United States. According to South Korea's 2016 defense white paper, Seoul desires to strengthen "both ROK-U.S. combined capabilities and independent capabilities . . . to effectively deter and respond to mounting nuclear and missile threats from North Korea."[120] South Korea's actions and words suggest that, despite a desire for BMD independence, it does not reject cooperation with the United States completely.

South Korea's perceptions of U.S. commitment and expected behavior also likely color Seoul's perceived risk of entrapment or abandonment. Some scholars have observed that during the Cold War South Korea primarily feared abandonment, but since the end of the Cold War it more often has feared entrapment, partly because of the sometimes aggressive U.S. military stance toward North Korea.[121] President Trump's bellicose rhetoric toward North Korea and reports in 2017 of planning for a limited strike on North Korea might have raised further South Korea's fear of entrapment.[122] On the other hand, Trump's call for renegotiating the U.S.-ROK Free Trade Agreement or suspending combined military exercises after the 2018 Singapore summit with Pyongyang's Kim Jong-un could send confusing messages about Washington's commitment to Seoul.[123] Whether U.S. BMD causes an ally to fear abandonment or entrapment does not occur in a political vacuum, and an ally such as South Korea instead probably assesses BMD as one piece of evidence about the overall commitment of the United States to their mutual alliance.

NATO: From Fear of Abandonment to Alliance BMD. NATO's initial encounter with modern U.S. BMD, which focused on homeland defense during the George W. Bush administration, fanned familiar fears of abandonment, but this anxiety waned as U.S. missile-defense policy in Europe evolved to favor regional defense. In the years around Washington's withdrawal from the ABM Treaty, the European NATO allies did not consider ballistic missiles a threat, they expected BMD to change mutual dependence and vulnerability, and they had broader doubts about U.S. commitment. Not surprisingly, these factors stoked European fears of abandonment. The shift to regional defense during the Obama administration helped assuage these earlier fears and contributed to the alliance benefits that U.S. policy predicts.

Even before the Bush administration withdrew from the ABM Treaty in 2001, the United States and its NATO allies disagreed on the relevance of BMD in the

post–Cold War environment. The United States advocated national missile defense (NMD) to counter the threat that "rogue states" such as North Korea might pose in the future.[124] Europeans, however, did not think these missile threats were imminent or compelling, particularly when compared with more-immediate and proximate challenges such as terrorism or conflict in the Balkans.[125] French policy makers not only believed that the existing missile threat did not justify BMD but worried further about how a missile-defense revival might threaten its independent nuclear deterrent.[126] For Europeans who already were concerned about diminished U.S. interest in European security, NMD and the likely U.S. withdrawal from the ABM Treaty—which some Europeans viewed as the foundation of nuclear stability—provided further evidence to complement anxieties about U.S. reliability in the seemingly unipolar post–Cold War environment.[127]

Against this backdrop, the Bush administration's 2006 proposal to put ten GBI missiles in Poland and a supporting radar in the Czech Republic to defend the United States and some of Western Europe against future Iranian ICBMs resurrected European abandonment worries. The United States referred to the proposal as the "third site," because it would have been the third GBI base after Fort Greely in Alaska and Vandenberg Air Force Base in California. Both host countries supported this initiative, which would have been a visible sign of U.S. commitment to them and, like the presence of any other forward-deployed U.S. forces, would have provided trip-wire benefits.[128] However, the benefits were not as evident to the rest of NATO, which still disagreed with the United States about the relevance and likelihood of an ICBM threat from Iran.[129] Furthermore, the third site would have contributed only to the defense of some NATO members, as well as the United States. Forward-deployed GBIs could not protect those NATO members closest to Iran, in southeastern Europe.[130] The decision also negatively signaled U.S. commitment to multilateral alliance processes because the United States negotiated the basing arrangements directly with the host countries, bypassing NATO channels (which might have been slower and more contentious).[131] As with Sentinel, the United States seemed to have dodged the difficult work of meaningfully consulting with most NATO allies about its BMD plans.

Upon taking office in 2009, the Obama administration reassessed the missile threat from Iran and U.S. BMD capabilities. American policy makers determined that Iran was more likely to threaten Europe with shorter-range missiles than to hold the United States at risk with ICBMs.[132] Additionally, U.S. regional-defense systems, particularly the Navy's SM-3 interceptor, had proved themselves better in testing than GBIs.[133] So the Obama administration scrapped the not-yet-fielded homeland defense–oriented third site and replaced it with the European Phased Adaptive Approach (EPAA), a regional-defense plan that included

deploying BMD-capable USN ships to Europe and building Aegis Ashore sites in Romania and Poland.[134]

Russian opposition to missile defense also influenced European attitudes and Obama administration decisions. Russia suspected that the third site and EPAA were in opposition to Russian strategic nuclear capabilities and opposed both initiatives. Russia argued that the third site's GBIs and the SM-3 Block IIB interceptor proposed for EPAA (but later canceled) would have had some capability of defending the United States against Russian ICBMs and that Aegis Ashore's missile launchers could launch Tomahawk cruise missiles in violation of the Intermediate-Range Nuclear Forces (INF) Treaty.[135] The United States and NATO disagreed with Russia's positions.[136] Russia's opposition to the third site and to the SM-3 Block IIB in EPAA likely influenced allied opinions about these weapons and U.S. decisions to cancel each program, particularly at a time when both Western Europe and the United States sought to improve relations with Russia.[137]

Despite Russia's unmistakable imprint on these BMD decisions, it remains valuable to assess them from the intra-alliance perspective. Unlike the third site, NATO allies favorably received EPAA in part because U.S. and NATO threat perceptions more closely aligned, EPAA provided tangible defensive benefits to European allies, and EPAA's deployment has indicated U.S. commitment to Europe across administrations. Whereas European allies did not believe an Iranian ICBM threat was imminent, they felt Tehran more plausibly could develop and field missiles capable of reaching parts of Europe. Reflecting this common threat assessment and new alliance-wide support for BMD, leaders of NATO countries declared in 2010 that they should develop a "NATO missile defense capability" that would include both EPAA and indigenous capabilities to defend all NATO's population and territory from ballistic-missile attack.[138] This change in European defense policy demonstrated that European NATO members recognized ballistic missiles as a threat and believed that U.S. BMD would benefit, rather than exclude, them.

Under EPAA, relative dependence and vulnerability between the United States and its allies did not change dramatically. Instead, the shift toward regional defense enabled European allies to reduce their vulnerability by hosting and integrating with U.S. BMD systems. EPAA serves as a component within a broader multilateral effort by NATO members toward an "alliance-commanded" BMD system, which will incorporate a variety of interoperable national systems.[139] While it may be difficult to integrate multinational capabilities seamlessly, NATO's approach instead flexibly expands opportunities for participation and burden sharing among alliance members, particularly ones that may not be able to afford expensive U.S. equipment or may want to support domestic defense industries.

U.S. BMD systems deployed to Europe as part of EPAA have provided tangible evidence of U.S. commitment to European defense across administrations. Gustav Lindstrom, director of the European Union Institute for Security Studies, describes EPAA as "now a core project for Europe and NATO, effectively strengthening the relationship between NATO and the United States." Therefore, he argues, it also has become a "weather vane for gauging the state and 'temperature' of transatlantic relations."[140] Similarly, Catherine McArdle Kelleher at the University of Maryland has described EPAA as a "barometer of U.S. support" for NATO.[141] That being the case, NATO allies closely watch EPAA for evidence of continuity or change in the climate of U.S.-NATO relations. President Trump's continued support of EPAA has reassured many NATO allies.[142] As described earlier with regard to South Korea, while BMD cooperation constitutes just one portion of a complex alliance relationship, for allies it may be a particularly useful indicator of U.S. commitment because the amount of U.S. investment—in terms of money, military systems, and people—is readily apparent.

Many factors influence whether and how NATO attitudes toward EPAA will evolve in the future.[143] Threat assessments may change or diverge. Some in Europe expected the Iranian ballistic-missile threat to diminish following the 2015 Joint Comprehensive Plan of Action (JCPOA). The Trump administration, however, has disagreed with that benign threat assessment. Burden-sharing expectations may shift. EPAA imposes few fiscal costs on the NATO alliance, but the Trump administration seeks more financial contributions by allies.[144] As missile-defense capabilities improve, Russia likely will continue to pressure the NATO alliance to curtail or abandon missile-defense efforts. These factors could upend the existing alignment among NATO members about missile defense.

POLICY IMPLICATIONS

BMD has become a fundamental element of the modern security environment and it is appropriate for the United States to increase BMD investment, particularly in light of North Korea's improving strategic arsenal and other countries' quickly maturing advanced conventional threats, such as antiship ballistic missiles and hypersonic weapons. Missile defenses are, however, more than just weapon systems with defensive capabilities and fiscal costs; they also have political benefits and drawbacks. Despite the policy consensus that BMD benefits U.S. alliances, the historical record shows that BMD has not had this positive effect consistently, and at times has caused allies to worry that the United States might abandon or entrap them. Increasing U.S. BMD capabilities could pose these risks again to U.S. alliances, even if U.S. policy makers do not intend that outcome. The United States can manage these risks by sharing information to align U.S. and allied perceptions of missile threats and BMD capabilities, promoting BMD

cooperation in a manner that reduces both U.S. and allied vulnerability, and leveraging BMD policy and capabilities to maximize its value as a symbol of U.S. alliance commitment.

Before an examination of the policy prescriptions, it is useful first to consider several ways in which modern BMD might sow doubt in our allies' perceptions of alliance cohesion. First, increased U.S. spending on homeland-defense capabilities, such as improved sensors or larger numbers of interceptors, could make it appear that the United States seeks to defend itself rather than allies and might spark allied fears of abandonment.[145] At what point in building BMD capability and capacity might U.S. allies fear abandonment, and how can Washington limit this effect? Second, the United States likely will continue to advocate interoperability across U.S. and allied BMD systems, which could cause some allies to worry about entrapment risks. How can the United States assuage these concerns while still benefiting from BMD interoperability? Lastly, President Trump's combative rhetoric toward traditional allies could cause them to question U.S. commitment and view U.S. BMD investments through a clouded lens.

The factors that may influence an ally's perception of U.S. BMD and the risks of abandonment and entrapment—shared threat perceptions, relative dependence and vulnerability, and evidence of commitment—provide useful guideposts for understanding BMD's effects on alliances and for designing policies that could reinforce rather than undermine alliance cohesion. U.S. missile-defense policy initiatives—such as increasing homeland-defense capability and capacity, fielding more space-based sensors, and encouraging more BMD burden sharing with allies—should be evaluated from an ally's perspective, using this framework.

Divergent threat perceptions lie at the heart of each historical case in which an ally worried about BMD's effect on alliance cohesion, such as European NATO members in the late 1960s, while closely aligned threat perceptions generally have caused allies to view U.S. BMD capabilities favorably, such as Japan in the 2010s. The United States should, or should continue to, share information about missile threats with its allies to the greatest extent possible through diplomatic, intelligence, and even public affairs channels. This information will help allied leaders and their people understand U.S. intent for deploying new BMD capabilities, but also may help allies more fully appreciate the nature of the threat they face.

Just as BMD is more likely to improve alliance cohesion if both the United States and its allies share a common threat perception, they also should understand the capabilities and limitations of U.S. BMD to counter these threats. For example, the *MDR* proposes placing more emphasis on homeland defense and advocates increasing the number of homeland-defense GBI missiles from forty-four to at least sixty-four, improving the GBI's warhead, and even employing the Navy's SM-3 Block IIA interceptor as an "underlay" to supplement GBIs.[146]

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An ally could perceive this new attention to homeland defense as a sign of U.S. retrenchment and perhaps increased risk of abandonment.

An ally might try to understand whether and how these changes will affect U.S. capabilities. The 45 percent increase in GBIs likely would not result in a significant improvement in performance. With a shot doctrine—referring to the number of defensive missiles launched against every incoming ICBM—of two or four GBIs per target, the current U.S. homeland-defense system probably can engage only about ten to twenty threat missiles.[147] An informed observer could determine that adding twenty GBIs would enable the United States to defend against only five to ten more missiles, at best. Improvements to U.S. homeland defenses that are harder for an ally to quantify may be more likely to raise concerns of abandonment. Employing the SM-3 Block IIA as a homeland-defense weapon, for example, would blur the previously clear lines between homeland defense and regional weapon systems, and it would be difficult for an observer to determine the quantity and types of weapons in the vertical launchers of a BMD-capable ship or an Aegis Ashore site.[148]

Despite these potential challenges, an open dialogue with allies should express that BMD alone is not likely to provide sufficient protection for the United States but will instead remain a thin defense against a relatively small-scale attack, and therefore only one part of U.S. security strategy. Put another way, capacity and capability constraints might reassure U.S. allies about the extent and intent of U.S. BMD systems, and thus limit concerns about alliance cohesion. Speaking about how an adversary could view U.S. BMD, Frank Rose, then Assistant Secretary of State for Arms Control, Verification, and Compliance, said in 2016 that he did not think BMD was destabilizing, because the United States has "limited numbers, limited capabilities, and we have been very, very transparent about our missile defenses."[149] Transparency with allies—particularly about missile-defense budgets, procurement, testing, and deployment plans—may similarly stabilize their perceptions of U.S. commitment. At least among democratic allies, transparency also may help voters in allied countries make better-informed decisions about missile defense. Private and public transparency with U.S. allies about missile threats and defenses should continue.[150]

Not surprisingly, allies have responded favorably to BMD initiatives that do not negatively affect the balance of relative dependence or vulnerability in the alliance; they prefer BMD efforts that either directly improve their defenses or at least do not subtract from their own security. The Western European experience with Sentinel in the 1960s is a useful negative example; the United States would not share Sentinel with NATO allies, and the parallel growth of Soviet ABM capabilities could have reduced the value of some members' nuclear deterrents. This dual shift in relative vulnerability—the United States seemingly reducing its

vulnerability while European NATO members' vulnerability increased—likely contributed to their fear of abandonment.

The United States should recognize when U.S. BMD capability improvements might cause an ally to perceive a relative shift in their dependence or vulnerability. One way to achieve this result while improving U.S. homeland and regional defenses would be to continue a U.S. policy of encouraging allies to acquire or develop BMD systems and advocating interoperability with U.S. and other allied BMD systems to the greatest extent possible. Not only will close cooperation avoid an imbalance in relative vulnerability but it also likely increases mutual dependence. BMD systems interoperability and information sharing could improve allied perceptions of BMD's effect on an alliance. Consider two possible outcomes if the United States expands its BMD sensor network in space, as the 2019 *MDR* proposes.[151] If the United States withholds these sensor data from allies, they could feel that U.S. battlespace awareness is improving while theirs falls behind, perhaps leading to questions about alliance cohesion. If, however, the United States shares data with allies using interoperable systems, they likely would recognize the mutual benefits of this technology and view it as bolstering their alliance.

U.S.-Japan BMD cooperation best exemplifies relative dependence and vulnerability moving in tandem. The close industrial and technological collaboration on the SM-3 Block IIA likely sends a clear message to Tokyo that Washington could not field this advanced interceptor easily without its support. Similarly, the role that Japan-based sensors such as the AN/TPY-2 radar play in defending both Japanese and U.S. interests emphasizes the alliance's mutually dependent and beneficial character. The interoperability of U.S. and Japanese BMD-capable destroyers also well demonstrates that U.S. and Japanese vulnerability against shared missile threats rises or falls together rather than separately. The United States should continue to grow and improve the BMD relationship with Japan and foster similar industrial and operational bonds with other allies.

South Korea's concern about THAAD creating risks of entrapment, or at least entanglement, demonstrates a possible downside of efforts to share information and integrate capabilities across national borders. The 2019 *MDR* prioritizes cooperative BMD efforts that deepen integration across regions and between homeland- and regional-defense systems, which may increase allied concerns about entrapment further.[152] Some analysts advocate separate information-sharing architectures to segregate different allies from each other and reduce the apparent entanglement.[153] This approach would impose additional costs on the United States to develop, test, and upgrade parallel systems. Instead, if an ally hesitates to join an integrated BMD network, the United States should still encourage it to deploy defenses that retain the option of later joining the U.S.-led

architecture. This encouragement could include urging an ally to buy already interoperable U.S.-made systems or develop indigenous ones compatible with U.S. networks. If an ally perceives an increased missile threat, it could join an allied BMD architecture more quickly if it already has interoperable systems.

BMD's relationship to allied perceptions of U.S. commitment is more complex. Unlike the case with perceptions of threats and vulnerability, the broader crosscurrents of an alliance relationship shape perceptions of commitment. Nevertheless, BMD policy still shapes these views and should be explicit and credible. The Trump administration's policy values BMD as a positive factor in U.S. alliance relationships, but presidential rhetoric, which is often critical of U.S. allies, risks undermining the policy's credibility. When President Trump unveiled the 2019 *MDR,* he emphasized homeland defense and took a transactional approach to U.S. allies. He asserted that U.S. BMD "will prioritize the defense of the American people above all else," which could revive an ally's concerns of a "Fortress America" approach. As for allies, he said "we will insist on fair burden sharing with our allies. I've made it clear we are protecting many, many wealthy, wealthy, wealthy, wealthy countries. . . . We protect all of these wealthy countries, which I'm very honored to do, but many of them are so wealthy they can easily pay us the cost of this protection."[154] While burden sharing is a fundamental reason why states ally with each other, trying to account for the costs and benefits of missile defense misses the wider view of an alliance's value to the United States and could foster an ally's fears of abandonment.

To counter the mismatch between policy and presidential pronouncements, the United States should continue to leverage BMD investment and employment to signal credibly our support for our allies. Forward-deployed BMD systems, such as Aegis Ashore, and BMD-capable ships based abroad amplify this signal by embedding U.S. personnel in an ally's territory and provide more-durable indications of U.S. commitment than mobile or rotationally deployed systems, which also signal U.S. commitment but could be removed more quickly.[155] Regardless of a forward-deployed or -deployable BMD system's capability (how well or poorly it performs) or capacity (how many missiles it can engage), it still tangibly signals U.S. commitment. Increasing the number of forward-deployed BMD systems also might free up limited deployable U.S. and allied BMD-capable systems, such as ships or Patriot batteries, to be used more efficiently and flexibly.[156] The United States should continue fielding and operating Aegis Ashore in Europe, support Japan's efforts to purchase its own Aegis Ashore systems, and identify other opportunities to deploy U.S. BMD capabilities forward.

Missile defense is a double-edged sword that can strengthen U.S. alliances, but also could weaken them by causing an ally to fear abandonment or entrapment.

Missile defense will remain an important component of U.S. security strategy, but missile-defense policy, rhetoric, and actions should reinforce, rather than undermine, U.S. alliances. To best leverage missile defense's potential benefits to alliances, the United States should continue to inform allies about missile threats and U.S. defenses; share or integrate missile-defense capabilities with allies; and use BMD deployments, cooperation, and consultation to demonstrate U.S. alliance commitment concretely. U.S. security strategy relies on both alliances and missile defense, but U.S. policy makers should not take allies for granted while pursuing technological solutions to geopolitical challenges.

NOTES

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134. Jaganath Sankaran, *The United States' European Phased Adaptive Approach Missile Defense System: Defending against Iranian Threats without Diluting the Russian Deterrent* (Santa Monica, CA: RAND, 2015).

135. For Russian opposition to third site, see Richard Weitz, "Illusive Visions and Practical Realities: Russia, NATO and Missile Defense," *Survival* 52, no. 4 (August–September 2010), pp. 99–120; for a technical overview of Russian opposition to EPAA, see Yousaf Butt and Theodore Postol, "Upsetting the Reset: The Technical Basis of Russian Concern over NATO Missile Defense," *Federation of American Scientists,* September 2011, fas.org/.

136. "NATO-Russia: Setting the Record Straight," *North Atlantic Treaty Organization,* 9 September 2018, www.nato.int/; for a U.S. rebuttal of the Russian INF argument, see U.S. State Dept., "Refuting Russian Allegations of U.S. Noncompliance with the INF Treaty," fact sheet, 8 December 2017, www.state.gov/.

137. For discussion of replacing the third site with EPAA, see Michael O'Hanlon, "Star Wars Retreats? Rethinking U.S. Missile Defense in Europe," *Foreign Affairs,* 23 September 2009, www.foreignaffairs.com/; for the cancelation of the SM-3 Block IIB, see David M. Herszenhorn and Michael R. Gordon, "U.S. Cancels Part of Missile Defense That Russia Opposed," *New York Times,* 16 March 2013, www.nytimes.com/.

138. North Atlantic Treaty Organization, "Lisbon Summit Declaration," press release (2010) 155, November 2010, para. 36, www.nato.int/.

139. General Report on Ballistic Missile Defence and NATO, NATO Parl. Ass. Doc. (161 DSC 17 E bis), p. 1 (2017), available at www.nato-pa.int/; North Atlantic Treaty Organization, "Wales Summit Declaration," press realease (2019) 120, 4 September 2014, para. 54–61, www.nato.int/. For an overview of NATO BMD command and control and participating countries, see North Atlantic Treaty Organization, "NATO Ballistic Missile Defense," fact sheet, July 2016, www.nato.int/.

140. Lindstrom, "Europe and Missile Defense," p. 118.

141. Catherine McArdle Kelleher, "Missile Defense in Europe: Progress toward an Uncertain Outcome," in *Missile Defense, Extended Deterrence, and Nonproliferation in the 21st Century,* ed. Kelleher, p. 6.

142. Report on Ballistic Missile Defence and NATO, pp. 6–7.

143. For one perspective on these factors, see Marcel Dickow et al., "Germany and NATO Missile Defence: Between Adaptation and

Persistence," *SWP Comments* 22 (April 2016), www.swp-berlin.org/.

144. U.S. Defense Dept., *Missile Defense Review,* pp. 31–32.

145. For the "rebalance to homeland," see Thomas Karako, "A Missile Defense Agenda," *National Review,* 2 October 2017, www.nationalreview.com/, and Thomas Karako and Ian Williams, "The Forthcoming Missile Defense Review," *Center for Strategic and International Studies,* 6 April 2018, defense360.csis.org/. For a North Korea focus of recent BMD capacity and capability increases, see Greaves, "[Testimony] before the Senate Armed Services Committee, Strategic Forces Subcommittee." Despite discussing denuclearization with North Korea at the 2018 summit in Singapore, the United States remains committed to growing its homeland-defense BMD; see "Press Conference by Secretary Mattis and Sen. Sullivan in Alaska," *U.S. Defense Department,* 26 June 2018, www.defense.gov/.

146. U.S. Defense Dept., *Missile Defense Review,* p. 55.

147. For a shot doctrine of at least two, see Karako and Williams, *Missile Defense 2020,* p. 81; for a shot doctrine of four, see Ankit Panda and Vipin Narang, "Deadly Overconfidence: Trump Thinks Missile Defenses Work against North Korea, and That Should Scare You," *War on the Rocks,* 16 October 2017, warontherocks.com/. For additional information on GBI's record in live-fire tests, see U.S. Missile Defense Agency, "Ballistic Missile Defense Intercept Flight Test Record."

148. The U.S. Navy launches BMD weapons from the Mk 41 Vertical Launching System (VLS), both on BMD-capable ships and at Aegis Ashore sites. VLS can launch a variety of weapons, including the antiaircraft SM-2 and SM-6 missiles, the antisubmarine ASROC, the land-attack Tomahawk cruise missile, and the BMD-capable SM-3 and SM-6 missiles. It would be difficult for an outside observer to discern what weapons a VLS contains. In the 1980s, this aspect of VLS made it difficult to know whether a ship was carrying nuclear or conventional Tomahawks. See Henry C. Mustin, "The Sea Launched Cruise Missile: More Than a Bargaining Chip," *International Security* 13, no. 3 (Winter 1988–89), pp. 184–90, and Rose E. Gottemoeller, "Finding Solutions to SLCM Arms Control Problems," *International Security* 13, no. 3 (Winter 1988–89), pp. 175–83. More recently, Russia points to VLS's diverse potential armament to argue that Aegis Ashore sites could launch Tomahawks in violation of the INF Treaty. See U.S. State Dept., "Refuting Russian Allegations of U.S. Noncompliance with the INF Treaty."

149. Frank A. Rose, Assistant Secretary of State for Arms Control, Verification, and Compliance, press briefing, 13 January 2016, available at photos.state.gov/.

150. For an account of a 2018 effort to restrict information about BMD testing, see Steven Aftergood, "Missile Defense Flight Test Secrecy May Be Reversed," *Federation of American Scientists,* 26 April 2018, fas.org/.

151. The U.S. Missile Defense Agency has argued that an improved space-based missile-defense sensor layer is needed to defend better against advanced missile threats, such as hypersonic weapons. See Jen Judson, "MDA Director Provides Rough Sketch of Possible Space-Based Missile Defense Sensor Layer," *Defense News,* 8 August 2018, www.defensenews.com/, and U.S. Defense Dept., *Missile Defense Review,* p. 36.

152. U.S. Defense Dept., *Missile Defense Review,* p. 35.

153. Pollack, "Ballistic Missile Defense in South Korea," pp. 7–8.

154. "Remarks by President Trump and Vice President Pence Announcing the Missile Defense Review," *White House,* 17 January 2019, www.whitehouse.gov/.

155. Although Aegis Ashore systems look like permanent structures, they may be described best as semipermanent because the structure is intended to be relocatable. See U.S. Navy, "United States European Phased Adaptive Approach (EPAA)," fact sheet, www.public.navy.mil/; for a recent example of mobile BMD systems redeploying, see Gordon Lubold, "U.S. Pulling Some Missile-Defense Systems out of Mideast," *Wall Street Journal,* 26 September 2018, www.wsj.com/.

156. David B. Larter, "U.S. Navy Is Fed Up with Ballistic Missile Defense Patrols," *Defense News,* 16 June 2018, www.defensenews.com/.