

10th Berlin Conference on Asian Security (BCAS)

***Nuclear Stability in Asia
Strengthening Order in Times of Crises***

Berlin, June 19-21, 2016

A conference jointly organized by Stiftung Wissenschaft und Politik (SWP), Berlin
and Konrad-Adenauer-Stiftung (KAS), Berlin

Discussion Paper
Do Not Cite or Quote without Author's Permission

***Session IV:
New technologies, new strategic concepts and nuclear stability***

Amy Woolf
Congressional Research Service
Washington DC

New Technologies and Nuclear Stability

Amy F. Woolf¹

In a conference titled “Nuclear Stability in Asia” and on a panel designed to address how emerging technologies affect the strategic balance, it would seem natural to identify and analyze the interaction between these technologies and the U.S.-China nuclear balance. Chinese scholars and officials have offered assessments that answer this specific question: they note that U.S. missile defense programs and prompt global strike technologies could target China’s nuclear missiles and undermine China’s ability to threaten nuclear retaliation in the event of a conflict with the United States. They argue that the development and deployment of these systems could necessitate changes in China’s nuclear posture so that China could maintain its ability to resist coercion and maintain deterrence.²

But this frame of reference is too narrow, both for this panel and for an understanding of the relationship between these technologies and nuclear stability in Asia. For example, the United States has argued that its missile defense programs are neither intended to address concerns with China’s nuclear posture nor capable enough to undermine China’s nuclear deterrent. To the contrary, the U.S. pursuit of both homeland defense and regional missile defense architectures is a response to concerns with North Korea’s missile programs. The United States also does not link its prompt, precision conventional weapons to China’s nuclear deterrent, but notes that these systems, along with other U.S. conventional military capabilities in Asia, are part of the effort to support U.S. allies and strengthen regional stability.³ To the extent that China is a concern, the United States would argue that it is responding to China’s conventional military buildup and, particularly, to its anti-access and area denial capabilities, not to China’s nuclear posture. Finally, Chinese scholars and officials seem to agree with those in the United States who argue that strategic stability in Asia extends beyond a relatively simple calculus of the nuclear balance to include broader economic and military measures.⁴

¹ Amy F. Woolf is a Specialist in Nuclear Policy at the Congressional Research Service in Washington, D.C. The views expressed here are her own, and do not reflect on either the Congressional Research Service or the Library of Congress.

² Michael S. Chase, Arthur Chan. *China’s Evolving Approach to “Integrated Strategic Deterrence,”* Rand Corporation, 2016, p. 21.

³ The Pentagon has noted that “our relationships with Asian allies and key partners are critical to the future stability and growth of the region.” See U.S Department of Defense, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense, January 2012, p. 2.*

⁴ Lora Saalman, “Placing a Renminbi Sign on Strategic Stability and Nuclear Reductions” in *Strategic Stability: Contending Interpretations*, Elbridge A. Colby Michael S. Gerson, Editors.

As a result, this paper steps back from a calculation of the military balance and looks more broadly at U.S. policy in the Asia-Pacific region and the military dimensions of that policy. While the emerging technologies addressed in this session have the potential to undermine or alter the role of nuclear deterrence, it is the broader policy context and the potential clash of national interests that creates a need for nuclear deterrence between the United States and China in the first place. In other words, an effort to understand how these technologies might upset the nuclear balance requires an understanding, first, of the nature of the relationship between the two nations and the sources of instability in that relationship.

This is not to say that the analysis needs to begin with a definition of “strategic stability” or an assessment of the factors that determine whether a stable balance exists between the United States and China. Officials and analysts from the two countries have taken on this task in numerous official and unofficial dialogues, and have yet to reach agreement or even offer clear, durable guidelines for analysis. Dialogues about stability in the nuclear realm have provided a little more clarity, but, as noted above, this offers too narrow of a frame of reference.

For the purposes of this paper, the question is less about defining stability than about recognizing the causes of instability. The paper rests on the premise that instability exists when one or another party feels the need to adjust its policies, programs, or military operations to address a perceived threat to its near or long term interests. Instability, at its core, is created by competing, or at least conflicting, interests. If there is no conflict in interests, then no amount or type of military capability would seem to be threatening. Moreover, in a relationship where interests do conflict, military capabilities can create instabilities directly – by threatening core policy objectives or military capabilities of the other nation – or indirectly – by interacting with the military capabilities of the other nation in a way that prompts a military reaction to restore potential losses in capabilities.

Consequently, this paper begins with a description of U.S. policy and interests in Asia, and an identification of how China may view these interests to conflict with its own. It then provides an assessment of how the U.S. technologies under consideration in this paper support U.S. policies and interests, and how they do, or do not, represent a response to Chinese military developments. It concludes by addressing the question of what steps may be useful to restore the strategic balance and minimize instabilities.

The U.S. Rebalance to Asia

In 2011, the Obama Administration announced a shift in U.S. policy that is known as the “rebalance to Asia.”⁵ This change was not just about U.S. military programs and operations, but signaled a broader shift of “resources, diplomatic activity, and engagement.” As Tom Donilon, President Obama’s National Security Advisor at the time, stated, the rebalance was based on the simple proposition that “the U.S. is a Pacific power whose interests are inextricably linked with Asia’s economic, security, and political order.” He also noted that, because the United States maintains security obligations to allies and partners in the region, American presence “is essential to regional security.” As a result, the United States would seek to revitalize key alliances and engage more deploy in international and regional organizations.⁶

The Obama Administration has insisted that the rebalance to Asia is not an attempt to contain or confront China, but it has acknowledged that the policy was in part a response to China’s rise.⁷ The Department of Defense, in its report outlining the new strategy, stated that “China’s emergence as a regional power will have the potential to affect the U.S. economy and our security in a variety of ways. We will continue to make investments needed to ensure we maintain regional access and the ability to operate freely in keeping with our treaty obligations and international law.”⁸ At the same time, the Administration noted that the United States would “seek to manage disagreements and competition with China in a healthy, not disruptive manner.”⁹

There is little doubt, however, that China’s growing military capabilities, its lack of transparency about its intentions, and its assertive claims to disputed maritime territories have shaped U.S. policy. Some have expressed concerns about potential threats to U.S. allies and partners, while others have noted that China’s activities could impede freedom of navigation in the region. The promise to defend allies and partners is at the core of U.S. alliance strategy and the ability to project power on their behalf is essential to the concept of extended deterrence. As a result, some have noted that the rebalance is a response, in part, to China’s growing influence and can be seen

⁵ Hillary Clinton, “America’s Pacific Century,” *Foreign Policy*, October 11, 2011.

⁶ The White House, Office of the Press Secretary. Remarks by National Security Advisor Tom Donilon, November 15, 2012.

⁷ As Jeff Bader, Senior Director for Asia on the NSC at the start of the Obama Administration, has noted, the United States sought to “give comfort to countries uncertain about the impact of China’s rise and provide important balance and leadership...” Jeffrey A. Bader, *Obama and China’s Rise: An Insider’s Account of America’s Asia Strategy*, Brookings Institution Press, 2012, p. 4.

⁸ U.S. Department of Defense, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, January 2012, p. 2.

⁹ The White House, Office of the Press Secretary. Remarks by National Security Advisor Tom Donilon, November 15, 2012.

as an effort to warn China away from using “heavy-handed tactics against its neighbors and provide confidence to other countries that want to resist pressure from China.”

Some in China, however, view U.S. alliance relationships, and the U.S. promise to defend its allies in the region, as a reflection of a “Cold War mentality” that is “detrimental to the mutual trust and cooperation” between the countries.¹⁰ They see it as a way to divide China from its neighbors and to keep its military in check. Moreover, where the United States sees its presence in Asia and support for allies as a stabilizing factor, some in China see an enhanced U.S. military presence and alliance network as the main cause of regional instability.¹¹

The Military Dimension

Officials and analysts in the United States have raised concerns about some aspects of China’s military modernization programs. They note that China is developing capabilities to attack, at very long ranges, adversary forces that might deploy or operate within the western Pacific in the air, maritime, space, and cyberspace domains. These capabilities include more than 1,200 conventionally armed ballistic missiles, as well as ground-launched and air-launched land-attack cruise missiles. China also has an integrated air and missile defense system that is designed to attack long-range strike aircraft. U.S. threat assessments see China as systematically attempting to develop the means to exploit U.S. military vulnerabilities in ways that could degrade the U.S. ability to manage military operations. According to the U.S. Department of Defense, these capabilities are intended, “to specifically dissuade, deter, or if ordered, defeat possible third-party intervention during a large-scale, theater campaign such as a Taiwan contingency.”¹²

China, however, is not the only source of security challenges for the United States and its allies and partners in Asia. U.S. officials have frequently highlighted the threat created by North Korea – with its belligerent rhetoric, vast conventional capabilities, and missile and nuclear programs – as the primary source of U.S. concern in the region.¹³ These capabilities pose a direct threat to Japan and the Republic of Korea

¹⁰ Ibid.

¹¹ Elbridge A. Colby and Abraham M. Denmark, Coauthors. *Nuclear Weapons and U.S.-China Relations: A Way Forward*. CSIS, 2013. p. 40.

¹² U.S. Department of Defense, *Military and Security Developments Involving the People’s Republic of China, 2015*. Annual Report to Congress. pp. 33-34.

¹³ See, for example, Frank A. Rose. Assistant Secretary, Bureau of Arms Control, Verification and Compliance. *The Role of Missile Defense in Advancing U.S. National Security and That of Its Allies*. Remarks, Air Force Association Breakfast Series. May 5, 2016.

(ROK), key U.S. allies in the region, and to U.S. forces and territory. Extending deterrence to these allies, by maintaining the capability to both defend against and respond to the full range of provocations from North Korea, is a key element of U.S. defense and security posture.

According to U.S. officials, to meet the military challenges in Asia, U.S. forces will need to be able to project power in spite of the A2/AD challenges and to continue to be able to operate in contested environments.¹⁴ As a result, the United States has begun shifting military capabilities towards Asia, building up forces and infrastructure on Guam, and rotating additional forces into the region. It has also expanded its missile defense capabilities, strengthened its missile defense cooperation with allies in the region, and sought to expand its conventional precision strike capabilities.

China views these capabilities as a challenge to its nuclear deterrent and as a threat to stability in the region. The United States, however, believes these capabilities strengthen deterrence and enhance regional stability through a construct known as “regional security architectures.” Nuclear weapons have long played a central role in the effort to extend deterrence to U.S. allies, with extended deterrence often referred to as the “nuclear umbrella.” But the Obama Administration, in the 2010 Nuclear Posture Review, pledged to reduce the role of nuclear weapons in U.S. security policy. Regional security architectures achieve this goal by adding new military capabilities, such as missile defense and conventional precision strike, to the mix.¹⁵ These capabilities might provide a more tailored and practical response in circumstances where the threat of nuclear retaliation seems extreme. As a result, the United States believes these capabilities contribute to a more credible and robust deterrent posture.

Missile Defense

The Obama Administration outlined its goals for U.S. missile defense programs in the 2010 Ballistic Missile Defense Review (BMDR) Report. This report states that “the United States will continue to defend the homeland against the threat of limited ballistic missile attack” and that it “will defend against regional missile threats to U.S. forces, while protecting allies and partners and enabling them to defend themselves.”¹⁶ By providing the United States with the ability to defend its territory, its forces overseas, and its allies and partners from missile attack, U.S. missile defense

¹⁴ U.S. Department of Defense, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, January 2012, p. 4.

¹⁵ U.S. Department of Defense, *Nuclear Posture Review*, Report, April 2010, p. 7.

¹⁶ U.S. Department of Defense, *Ballistic Missile Defense Review*, Report, February 2010, p. 11.

programs allow the United States to maintain its freedom of action in contested environments, to reassure friends and allies about the U.S. commitment to their defense, and to strengthen regional security architectures.¹⁷

The United States has deployed a Ground-based Midcourse Defense (GMD) to protect against limited attacks on the U.S. homeland. This system includes 30 ground-based interceptors deployed at Fort Greely, Alaska (this number will rise to 44 interceptors in the next few years) and 4 interceptors at Vandenberg Air Force Base, California. The system relies on early warning radars in Alaska, California, Greenland, and the United Kingdom; sea-based radar systems on Aegis destroyers and Aegis cruisers; the Sea-Based X-band radar; and a sophisticated command and control infrastructure.

The BMDR Report states clearly that U.S. homeland defense efforts are focused on protecting the homeland from a ballistic missile attack by a regional actor such as North Korea.¹⁸ This capability provides necessary support to U.S. alliance commitments because North Korea's ability to threaten U.S. territory with nuclear-armed ballistic missiles would undermine the credibility of U.S. promises to assist the ROK or Japan if they were threatened or attacked by North Korea.

The Obama Administration has insisted that its Ground-based Missile Defense system is not scaled, intended, or capable of defending the United States against the larger and more sophisticated arsenals of Russia and China. The United States has sought to engage with China to explain that the system will not have enough interceptors to counter China's long-range missile force and that the interceptors lack the capability to intercept China's more advanced missiles. China, however, disputes this assessment. Chinese analysts have noted that the United States could eventually expand the numbers or capabilities of its missile interceptors. They also argue that, even if it did not have enough to intercept all Chinese missiles, the system could protect the United States from a Chinese retaliatory attack if Chinese forces had been degraded by a U.S. first strike.¹⁹

With regard to regional missile defense, the United States is developing a range of capabilities to defend U.S. forces, allies, and partners against attack from short- and medium-range ballistic missiles deployed by North Korea. These capabilities include PATRIOT batteries that provide point defense against short-range ballistic missiles,

¹⁷ Frank A. Rose. Assistant Secretary, Bureau of Arms Control, Verification and Compliance. *The Role of Missile Defense in Advancing U.S. National Security and That of Its Allies*. Remarks, Air Force Association Breakfast Series. May 5, 2016.

¹⁸ U.S. Department of Defense, *Ballistic Missile Defense Review*, Report, February 2010, p. 15.

¹⁹ See, for example, the discussion in Elbridge A. Colby and Wu Riqiang, "Seeking Strategic Stability for U.S.-China Relations in the Nuclear Domain," in *U.S.-China Relations in Strategic Domains*, edited by Travis Tanner and Wang Dong. The National Bureau of Asian Research. Special Report #57, April, 2016, p. 31.

AN/TPY-2 X-band radars for detecting and tracking ballistic missiles, and THAAD batteries for defense against both short- and medium-range ballistic missiles. Sea-based capabilities include the Aegis system that can support surveillance and tracking of ballistic missiles as well as an upper-tier missile defense capability with SM-3 interceptors. The United States is deploying many of these capabilities itself, but it is also partnering with allies in Europe and Asia to defend against, and defeat, North Korea's growing ballistic missile threats. The threat from North Korea's missile programs is also the motivation behind recent discussions between the United States and South Korea about the deployment of a THAAD battery on the Korean peninsula.

The United States has indicated that it will continue to cooperate with its allies on missile defense as long as North Korea continues to develop, test, and deploy ballistic missiles.²⁰ At the same time, from the U.S. perspective, regional missile defenses pose no threat to China's nuclear deterrent and should not be seen as upsetting the strategic balance in Asia. Chinese officials have, however, reached a different conclusion. Some perceive the growing presence of U.S. missile defense systems in Asia as a part of a broader U.S. plan to encircle and "contain" China. Chinese analysts think that the United States will increase the numbers or capabilities of its long-range missile defense interceptors so that, eventually, the United States will have the means to degrade China's ability to retaliate after a nuclear attack.²¹ Moreover Chinese analysts argue that the advanced radars associated with regional defense systems will provide the United States with the ability to track long-range missiles and distinguish between warheads and decoys. This concern has surfaced, recently, in response to the U.S.-ROK discussions on the possible deployment of THAAD in the ROK. Some Chinese strategists assert that THAAD would be poorly suited for intercepting missiles with the ranges needed to attack from North to South Korea and believe, as a result, that the deployment would eventually focus on China's missile capabilities.²²

The United States has disagreed with China's assessment of THAAD's capabilities and disputed China's conclusions. U.S. officials have noted that the single-stage THAAD interceptors that will be deployed in the South Korea will not have the range or capability to intercept Chinese ICBMs headed to for the United States. The United States has offered to hold a technical dialogue with China to explain the rationale for

²⁰ Frank A. Rose. Assistant Secretary, Bureau of Arms Control, Verification and Compliance. *The Role of Missile Defense in Advancing U.S. National Security and That of Its Allies*. Remarks, Air Force Association Breakfast Series. May 5, 2016.

²¹ Lora Saalman, "Placing a Renminbi Sign on Strategic Stability and Nuclear Reductions" in *Strategic Stability: Contending Interpretations*, Elbridge A. Colby Michael S. Gerson, editors. All Strategic Studies Institute (SSI) and U.S. Army War College (USAWC) Press, February 2013. P. 348.

²² Tong Zhao. "China Should Not Fear US Missile Deployment in South Korea," *South China Morning Post*, April 27, 2016.

a potential THAAD deployment.²³ However, some U.S. analysts have noted that unsettling China over THAAD may serve a useful purpose: to the extent that China is concerned about the potential deployment of THAAD, it might be more motivated to press North Korea to curtail its nuclear and missile programs.

In summary, the United States has insisted that its planned missile defense deployments do not pose a threat to China's nuclear deterrent because the United States has no plans to deploy long-range interceptors in the numbers or with the capability needed to threaten China's long-range nuclear missiles. In addition, regional missile defenses serve as a response to North Korea's nuclear and missile programs, and would lack the capabilities to track or target China's long-range nuclear missiles. As a result, because U.S. missile defenses would not be able protect the United States from a Chinese retaliatory attack, the United States could not threaten China with nuclear attack as a way to compel it to stand down and draw back in the event of a conventional conflict.

Prompt Global Strike

During the Cold War, the United States maintained military bases overseas so that it could position its troops to deter, and if necessary, respond promptly to an attack from the Soviet Union or its allies. In the 1990s, the United States began to reduce its permanent presence overseas and to strengthen its ability to move military forces into a region quickly when and if a conflict occurred. Because the United States could no longer be certain that these bases were located close to the most likely areas of conflict, analysts and military officials argued that the United States should maintain and enhance its long-range strike capability. This would not only allow the United States to pursue an adversary without relying on forward bases, it would also allow the United States to reach targets deep inside an enemy's territory if that area were out of the range of U.S. forces deployed at bases or on naval forces in the region.

The current Conventional Prompt Global Strike program (CPGS) grew out of these considerations. By the early 2000s, U.S. military planners began to worry that existing long-range conventional weapons, like cruise missiles, would be too slow to reach critical targets early in a conflict.²⁴ Prompt global strike weapons – whether they consisted of conventional warheads on long-range ballistic missiles, boost-glide systems with hypersonic delivery vehicles, or hypersonic air-launched cruise missiles

²³ Frank A. Rose. Assistant Secretary, Bureau of Arms Control, Verification and Compliance. *The Role of Missile Defense in Advancing U.S. National Security and That of Its Allies*. Remarks, Air Force Association Breakfast Series. May 5, 2016.

²⁴ James M. Acton, "Target?" *Foreign Policy*, May 6, 2014.

– could allow the United States to strike targets anywhere on Earth in as little as an hour. This capability could bolster U.S. efforts to deter and defeat adversaries by allowing the United States to attack high-value targets or “fleeting targets” at the start of or during a conflict. The United States has not yet deployed a CPGS system, and is still considering a number of possible technologies. Development and testing of one of the leading candidates – a hypersonic glide vehicle launched on ballistic missile – is proceeding slowly.

The Obama Administration offered its support for this capability in its 2010 Quadrennial Defense Review, noting that “enhanced long-range strike capabilities are one means of countering growing threats to forward deployed forces and bases and ensuring U.S. power projection capabilities.”²⁵ It also noted that these weapons could contribute to the goal of reducing U.S. reliance on nuclear weapons.²⁶ This is not because precision conventional weapons could substitute for nuclear weapons in attacks on targets covered in the U.S. nuclear war plan, but because they would expand the range of conventional options available in a conflict and reduce the likelihood that the United States would have to reach for a nuclear weapon to achieve its goals. Expanded conventional options might reassure U.S. allies of the U.S. commitment to their defense in cases where nuclear weapons were not seen as credible.

From the U.S. perspective, CPGS weapons would provide a “niche” capability, with a relatively small number of weapons directed against select, critical targets. Although the United States has not outlined a specific mission, analysts and military planners have offered a number of possibilities for use early in a conflict. These include destroying anti-satellite weapons before they could engage with U.S. satellites, suppressing air defense systems so that they could not target U.S. fighters or bombers, and targeting enemy command and control capabilities to disrupt ballistic or cruise missile attacks.²⁷

According to most recent analyses, the United States would not employ CPGS systems in an attack on China’s nuclear deterrent. Even if they were very accurate, they would not have the explosive power necessary to destroy hardened or deeply buried targets. Moreover, although some have argued that their mobility would allow them to track and destroy mobile ICBMs, this mission would require linking them to highly capable ISR capabilities that may not yet be available. In addition, although Congress has referenced the possible use of conventional weapons as a means to

²⁵ U.S. Department of Defense, Quadrennial Defense Review Report, Washington, DC, February 2010, pp. 32-33.

²⁶ U.S. Department of Defense, Nuclear Posture Review, Washington, DC, April 6, 2010, p. 34.

²⁷ James M. Acton, “Target?” *Foreign Policy*, May 6, 2014.

“neutralize” China’s “underground tunnel network,” there is no indication that the Pentagon sees this as a planned mission for CPGS weapons.²⁸ There is widespread agreement among U.S. analysts that CPGS systems would be better suited, and likely intended, for use in attacks against fixed, soft targets like radars or command and control nodes.

Precision conventional strike systems are, however, a key component of U.S. regional security architectures. By expanding the options available using U.S. conventional forces and improving the U.S. ability to disrupt or defeat an adversary’s A2/AD capabilities, CPGS would not only assure allies that the United States could respond promptly in a crisis without resorting to nuclear weapons, it would reduce the likelihood that an adversary such as China would be able to attack U.S. surveillance or command and control systems in ways that could degrade U.S. ability to manage military operations.

Although Chinese analysts appear to believe that CPGS systems could target and defeat China’s nuclear-armed ballistic missiles, and Chinese officials have argued that China may need to alter its nuclear posture to ensure credibility of its nuclear deterrent,²⁹ in the U.S. view, these systems should not upset stability in the nuclear balance. They still, however, could create significant instabilities in the U.S.-China relationship, particularly in times of crises. U.S. military operations are highly reliant on space for command and control and operational awareness. U.S. missile defense systems also rely on orbital sensors to track adversary missiles. China’s A2/AD capabilities in the space and cyber realms are designed to blind or disrupt these U.S. systems, and Chinese officials would likely employ these assets early in a crisis. Knowing this, U.S. leaders would likely employ CPGS and other prompt strike systems, in an effort to disrupt China’s effort to impede U.S. operations, even earlier in the crisis.³⁰ This is classic crisis instability, where the pressure to strike first is high, and could have serious ramifications for regional stability, escalation, and eventually nuclear stability.

²⁸ Section 1045 of the FY2013 NDAA (P.L. 112-239) required the Commander of the U.S. Strategic Command to submit a report on China's "underground tunnel network" and "the capability of the United States to use conventional and nuclear forces to neutralize such tunnels and what is stored within such tunnels."

²⁹ Lora Saalman, “Placing a Renminbi Sign on Strategic Stability and Nuclear Reductions” in *Strategic Stability: Contending Interpretations*, Elbridge A. Colby Michael S. Gerson, Editors. All Strategic Studies Institute (SSI) and U.S. Army War College (USAWC) Press, February 2013. P. 365.

³⁰ Joshua H. Pollack. “Boost-Glide Weapons and U.S.-China Strategic Stability.” *Nonproliferation Review*. Spring 2015. p. 157.

Managing instabilities

From the U.S. perspective, neither U.S. missile defense capabilities nor U.S. conventional precision strike systems would pose a direct threat to China's nuclear deterrent. China, however, holds a different view, and has sought to strengthen its nuclear deterrent to ensure that it would have a sufficient force available to retaliate after a U.S. nuclear strike. This has included efforts to increase the numbers of missiles and warheads in China's force, to increase mobility on land and at sea, and to introduce hypersonic technologies capable of penetrating missile defenses. The United States has expressed concerns about China's nuclear modernization programs, in part because China's lack of transparency complicates efforts to monitor and understand China's intentions. But the United States does not view these efforts as a threat to the U.S. nuclear deterrent, or as a challenge to nuclear stability. As was noted earlier, U.S. concerns with instability in Asia stem from Chinese conventional capabilities – particularly its missile programs and A2/AD efforts – and its assertive claims in regional maritime disputes.

There is, nevertheless, a nuclear dimension, even in a conventional crisis, because of the risk of nuclear conflict between the United States and China resulting from escalation from a conventional conflict. Therefore the question of whether U.S. missile defense and precision conventional strike programs might upset the strategic nuclear balance with China by prompting changes in China's nuclear posture depends, in great measure, on how China acts at the conventional level after it acquires more capable nuclear forces. If China believes that its expanded nuclear capabilities strengthen its ability to ensure retaliation after a nuclear strike, it might become more assertive in a regional conflict on the premise that the United States would be less likely to intervene because escalation could lead to nuclear attacks on the U.S. homeland. Alternatively, if China believes that its expanded nuclear capabilities simply restore its nuclear deterrent in the face of new challenges, it may remain somewhat risk averse, knowing that the United States has deployed missile defenses and precision strike systems to protect itself and as a part of its commitment to its allies.

The United States and China could pursue a number of alternatives to address these uncertainties and avoid instability in Asia. First, either or both countries could alter the policies that challenge the vital interests of the other nation. The United States could withdraw from regional alliances and reduce the capabilities and operations that are needed to reassure its allies. This might ease China's concerns about U.S. intentions and reduce the risk of conflict over what China perceives to be its core interests. China could withdraw its territorial claims, suspend its construction

activities on disputed geographic features, and reduce those capabilities and operations that are designed to degrade U.S. capabilities. This might ease U.S. concerns about challenges to its right to freedom of navigation and overflight and threats to its allies in the region. Second, both countries could accept limits or restrictions on the military capabilities that the other finds threatening. For example, the United States could limit the scope, numbers, and capabilities of its missile defense systems, possibly in exchange for reductions in the numbers and types of Chinese ballistic and cruise missiles. Finally, they could hold discussions to explain why the policies described above are not a challenge to the other country's interests and why the programs described here do not undermine the other country's ability to pursue its own interests. These discussions could encourage transparency, develop rules of the road, and possibly foster improved cooperation, to reduce the risk that crises lead to conflicts that could escalate to nuclear use.

At the present time, the first of these alternatives is untenable. There is virtually no chance that either nation would abandon policies that both view as central to their national security interests. The second is also implausible. Neither side is likely to volunteer reductions or accept limits on capabilities that it views as essential to its military strategy. The third option – strategic dialogue – is essentially the approach that the two nations have attempted, with little result, over the past several years. Moreover, any measures designed to improve transparency and mitigate risks are likely to be ignored in times of crises. Yet, given the expanding military, space, and cyber capabilities of both the United States and China, conversations and consultations may be the only path available at the present time.