CARNEGIE
ENDOWMENT FOR
INTERNATIONAL PEACE

A PRECARIOUS TRIANGLE

U.S.-China Strategic Stability and Japan

James L. Schoff and Li Bin

NOVEMBER 2017

CARNEGIE
ENDOWMENT FOR
INTERNATIONAL PEACE

A PRECARIOUS TRIANGLE

U.S.-China Strategic Stability and Japan

James L. Schoff and Li Bin

Carnegie Endowment for International Peace
Publications Department
1779 Massachusetts Avenue, NW
Washington, DC 20036
P: +1 202 483 7600
F: +1 202 483 1840
CarnegieEndowment.org

This publication can be downloaded at no cost
at CarnegieEndowment.org/pubs.

CP 321

Contents

About the Authors

James L. Schoff is a senior fellow in the Carnegie Asia Program. His research focuses on U.S.-Japan relations and regional engagement, Japanese politics and security, and the private sector's role in Japanese policymaking. He previously served as senior adviser for East Asia policy at the U.S. Office of the Secretary of Defense and as director of Asia Pacific Studies at the Institute for Foreign Policy Analysis (IFPA).

Li Bin is a senior fellow working jointly in the Nuclear Policy Program and the Asia Program at the Carnegie Endowment for International Peace. A physicist and expert on nuclear disarmament, his research focuses on China's nuclear and arms control policy and on U.S.-Chinese nuclear relations.

* * *

Tong Zhao is a fellow in Carnegie's Nuclear Policy Program based at the Carnegie–Tsinghua Center for Global Policy. His research focuses on strategic security issues, including nuclear arms control, nonproliferation, missile defense, strategic stability, and China's security and foreign policy.

Takahashi Sugio is a research fellow at Japan's National Institute for Defense Studies and chief of its Policy Simulation Division. He has published extensively in the areas of nuclear strategy, the Japan-U.S. alliance, and East Asian regional security.

Linton F. Brooks is an independent consultant on national security issues, a senior adviser at the Center for Strategic and International Studies, a distinguished research fellow at the National Defense University, and an adviser to four of the U.S. Department of Energy national laboratories.

Summary

U.S.-China strategic nuclear relations are becoming more salient to U.S. defense planning and alliance management, as military tension and mutual suspicion rise in Northeast Asia. The North Korean nuclear catalyst and the need to balance allied interests make this expanding nuclear dimension increasingly complex.

To improve mutual understanding of strategic stability and introduce the alliance element, Carnegie facilitated discussions between American, Chinese, and Japanese security experts. They focused on: a shared concept and definition of strategic stability; its purpose; and its establishment. While participants agreed on certain traditional characteristics of strategic stability, divergent views about the sources and possible remedies for currently fragile crisis and arms race stability will be difficult to bridge and do not bode well for the region, absent appropriate leadership attention.

The workshop highlighted four interconnected areas that will frustrate attempts to reduce the role of nuclear weapons in U.S.-China relations or U.S.-alliance concerns: the extent of linkage between regional/conventional conflict and the nuclear realm; Japan's role; perceptions of mutual vulnerability; and North Korea's role. Follow-on dialogue is recommended.

Findings and Recommendations

- The participants generally agreed that the United States is vulnerable to Chinese nuclear retaliation, but they disagreed over how Washington should respond, and the U.S.-Japan alliance is a driving factor behind this. Should the United States recognize this dynamic—thereby accepting it—or actively seek to limit such vulnerability?
- Japanese experts are concerned that the regional conventional military balance increasingly favors China. They further worry that U.S.-China strategic stability could lead to instability at the conventional level in Northeast Asia. These concerns might be ameliorated if China and Japan could explore confidence building measures and crisis management tools in the conventional military domain.

- North Korea's nuclear and missile programs are the most immediate and severe threat because allied countermeasures could stimulate a further Chinese response. Future U.S.-China-Japan dialogue might address North Korea–related issues of crisis management, missile defense, or military posture and exercises, implying that resolution of North Korean nuclear issues could result in a rollback of some allied and Chinese countermeasures.
- Restraint in general is underappreciated, because self-restraint or mutual restraint is difficult to measure and evaluate. If one country is taking a deterrence step it considers the least aggressive option available, it is still changing the status quo and will likely be viewed as an escalation. Mutual transparency for internal decisionmaking could help, facilitated by peacetime and crisis communication between the United States, China, and Japan.
- Future dialogues should continue to address some traditional topics, for example, offense-defense balance, tactical weapons, and strategic warning. Additionally, the emerging areas of cyber and space vis-à-vis nuclear issues, accurate signaling, and proportionality of responses are particularly fertile ground for discussion and collaborative research.

Questions Regarding U.S.-China Strategic Stability

The salience of U.S.-China strategic nuclear relations is rising, commensurate with the growth of China's economy and military capabilities, as Beijing implements a more assertive foreign and security policy in its near abroad.[1] For the United States and its allies in the region, these developments are sowing doubt about China's long-term intentions, while China is frustrated by Washington's suspicion and apparent desire to maintain regional primacy. This expanding nuclear dimension can impact not only the broader U.S.-China bilateral relationship but also the multilateral geopolitics of East Asia including U.S. alliances.

The 2010 "Nuclear Posture Review Report" issued by the U.S. Department of Defense stated an explicit policy of promoting "strategic stability" with China, although the report did not define the concept and regional strategic experts have different ideas about what it means and how to foster it—severely reducing its utility as a basis for confidence building. The Carnegie Endowment for International Peace has regularly fostered intellectual exchange regarding U.S.-China strategic nuclear relations, most recently with a focus on the role of Japan.[2]

American and Chinese scholars and analysts have written widely about U.S.-China strategic stability in recent years, especially in the context of China's expanding nuclear arsenal and U.S. efforts to deploy ballistic missile defense and develop various high-precision conventional weapons.[3] However, far less attention has been paid to the role that Japan plays in this equation, by virtue of its alliance with the United States, its territorial disputes with China, and its own internal debates about self-defense policy and military posture. Yet bringing Japan into the lens of strategic stability highlights the convergent and divergent incentives these states have and the challenges they face to develop and sustain strategic stability.

One important concern shared by analysts in both Japan and the United States, for example, is that the existence of strategic stability between China and the United States may encourage China to be more aggressive in its relations with Japan, in particular with conventional military force. The concern about emboldened Chinese military behavior toward Japan is one of the most important outstanding issues related to U.S.-China strategic stability. This issue has been raised at various bilateral forums, including Chinese-American discussions organized under a separate Carnegie project, but it has not been systematically discussed in the context of any trilateral American-Chinese-Japanese dialogue.[4] As U.S. President Donald Trump's administration prepares

a new Nuclear Posture Review for release in 2018, it is therefore an opportune time to clarify competing views of strategic stability and to incorporate Japanese perspectives in the discussion.

In order to promote improved mutual understanding of the meaning of strategic stability, Carnegie facilitated discussions between American, Chinese, and Japanese security experts on relevant issues. Specifically, trilateral discussion focused on three dimensions of strategic stability between China and the United States: a shared concept and definition of strategic stability; the purpose served by strategic stability; and approaches to creating strategic stability. Experts addressed the following questions:

(1) What is the concept of strategic stability? Does the concept include only the suppression of incentives for using nuclear weapons and/or expanding nuclear arsenals? What does it imply for understanding the notion of unacceptable damage? Or should it also include other elements, such as the creation of political and conventional military stability? How do nuclear-related developments in India, North Korea, and Russia impact our concepts of U.S.-China strategic stability?

(2) What purpose will be served by promoting strategic stability between China and the United States? Is the goal of strategic stability only to avoid nuclear escalation and a nuclear arms race (the more narrowly defined, traditional goal of strategic stability)? Or is U.S.-China strategic stability envisioned as serving some more ambitious purpose, such as paving the way for multilateral nuclear disarmament? How might strategic stability affect U.S. extended deterrence commitments to Japan? What are the implications for China-Japan security relations?

(3) What are useful approaches to develop strategic stability? The primary traditional approach is to adjust the strategic force structures of the two countries in order to reduce the incentives for a nuclear first strike by negotiating arms control agreements. Is this still the most viable approach? What other approaches should be considered (such as increasing transparency and negotiating confidence building measures)? What specific role could Japan play in these approaches? What challenges might it pose?

Carnegie commissioned background papers explaining national perspectives of the United States, China, and Japan from Ambassador Linton F. Brooks, Tong Zhao of the Carnegie–Tsinghua Center for Global Policy, and Takahashi Sugio of Japan's National Institute for Defense Studies, respectively. These papers were circulated among invited American, Chinese, and Japanese experts to foster a basis for further discussion at a trilateral workshop convened in Washington in late May 2017. The unique two-day workshop also included three bilateral discussions in order to promote as frank and comprehensive exchange of views as possible.

Multiple Views of U.S.-China Strategic Stability

Reflecting on his own country's thinking about strategic stability—both as a general concept and as applied to relations with China—one American workshop participant said, "It is in flux." Although the U.S. policy community reached a broad consensus on strategic stability during the Cold War in the context of bilateral relations with the Soviet Union, today's multipolar security environment and multidomain/multitheater conflict dimensions have opened up room for diverse and even conflicting opinions regarding the changing nature of strategic stability, how to maintain it, and, in some cases, even its desirability.

The situation becomes more muddled when Chinese scholars and officials are included in the conversation, given their different perspectives and displeasure at being thought of in a similar way as the United States' former Cold War adversary, the Soviet Union. Adding Japan further complicates the picture, since efforts by Washington to reassure Tokyo and Beijing on the nuclear front are often mutually exclusive. Although this project revealed some positive aspects of trilateral views on U.S.-China strategic stability, overall it underscored the persistence—and, in some ways, the darkening and lengthening—of the nuclear shadow over Asia. The only silver lining, perhaps, is that the current lack of clarity in policy thinking about strategic stability provides, at least, an opportunity to contribute to new consensus building and ideally a more peaceful future.

The background papers are included in this report's appendices, and there is no need to summarize here their concise and well-crafted arguments. They deserve to be read as their authors intended. Instead, the following section highlights key areas of agreement and misalignment found in the background papers, folding in the main debates and observations made during the two-day trilateral workshop. The final section considers the policy implications of our collective views of U.S.-China strategic stability and recommends certain issues for further bilateral and trilateral discussion.

A Useful Foundation for Dialogue on Strategic Stability

On the positive side, the benefit of several years of various bilateral Track II dialogues involving these three countries was evident from some constructive debates that shared many common points of reference and terminology. Participants agreed on the relevance of certain traditional characteristics of the strategic stability concept, including the premise that it only applies to countries with a plausible path to potential conflict (for example, strategic stability is meaningless in a U.S.-UK or UK-France context). Moreover, for the United States and China, a path to conflict is not unthinkable but it is not particularly likely at the moment. This is especially true in the nuclear realm, and for one critical component of strategic stability—specifically "first strike stability,"

when in a crisis or conventional military conflict there is no incentive to be the first to use nuclear weapons—there was general agreement that this is not an area of immediate concern.

In addition, although the United States and China tend to define strategic stability differently, the project showed basic agreement on two other key aspects within the traditional U.S. framework for strategic stability left over from the Cold War. These are "crisis stability" (where no country has incentive to be the first to use military force of any kind) and "arms race stability" (when neither side believes it can improve its relative position by building more nuclear weapons). Chinese scholars do tend to see strategic stability with the United States in broader terms, given the asymmetry in their nuclear strength and posture, and they consider general political-military relations—including economic and diplomatic considerations—as important factors. But, overall, the workshop discussion unfolded from a starting point of mutual understanding about the parameters of the topic and the project's ultimate objective. As one Chinese scholar noted, "The goal is the same for everyone: that we want to avoid a nuclear arms race and any nuclear use."

Conflicting Perspectives and Lack of Trust Undermine Stability

However, divergent views about the sources and possible remedies for currently fragile crisis and arms race stability will be difficult to bridge and do not bode well for the region, absent appropriate leadership attention. The workshop highlighted at least four interconnected areas of disagreement or misalignment that will frustrate attempts to reduce the role of nuclear weapons in U.S.-China relations or U.S.-alliance concerns. These are: 1) the extent of linkage between regional/conventional conflict and the nuclear realm; 2) the role of Japan; 3) perceptions of mutual vulnerability; and 4) the role of North Korea.

Conventional-Nuclear, Regional-Intercontinental Linkage

Viewed from Washington, the potential path to a U.S.-China nuclear exchange starts with conventional conflict in the Asia-Pacific region, possibly involving Taiwan or a skirmish on or above the ocean surrounding disputed territory. The Cuban Missile Crisis during the Cold War and the potential for clashes with North Korea today have conditioned U.S. policymakers to consider nuclear escalation risks from seemingly minor regional incidents. This tendency is reinforced by recent Russian moves, wherein "Russia has set out military doctrine for three levels of war: strategic, regional, and local," as one U.S. participant described, "and all deterrence tools [including special forces, covert operations, space, cyber, nuclear, and so on] apply to all three theaters." Many American specialists believe that competition for conventional military influence in Asia will stimulate the same key question: What does strategic stability mean at the regional level of war, not just at the strategic level between two nuclear powers?

In contrast, Chinese authorities traditionally draw a clear line between China's nuclear arsenal and the rest of its military when considering deterrence and potential conflict or escalation issues. It is only in recent years that Chinese specialists have started engaging their American counterparts in discussions about cross-domain escalation, and even then they emphasize the so-called nuclear taboo, which presupposes the non-use of nuclear weapons as a prohibitive norm.[5] In this sense, nuclear weapons are not intended to be used and exist only to deter a nuclear attack. One Chinese participant claimed that "China doesn't see [nuclear use] as regional theater versus strategic level issue, because if China used them regionally [in East Asia] it would be against a non-nuclear weapon state, which goes against its no-first-use policy and would have huge ramifications." The Chinese view, therefore, suggests that nuclear weapons should be a non-factor with regard to U.S. allies in East Asia.

However, Chinese objections to some U.S. and Japanese regional missile defense systems—including U.S. deployment of a Terminal High Altitude Area Defense (THAAD) system in South Korea—create suspicions in Japan and the United States about the strategic role for Chinese short- and intermediate-range nuclear forces. The allies wonder whether or not Beijing views this as an important regional retaliatory capability in which it will continue to invest. Clearly, this is an area that would benefit from deeper discussion among American, Japanese, and Chinese specialists, in part because it is so intertwined with other areas of disagreement.

The Role of Japan

U.S. scholars tend to see Japan's defense capability and the U.S.-Japan alliance as contributing to crisis stability because it discourages Chinese attempts to use military means to resolve territorial or sovereignty disputes in the East China Sea. They also believe that high-level U.S. reassurances that the Senkaku/Diaoyu Islands are covered by the U.S.-Japan Security Treaty help the situation, because it is clear that any attempt by China to seize the islands would be met with combined U.S. and Japanese military power. U.S. and Japanese scholars cautioned that China's excessive maritime claims and aggressive enforcement actions—including the use of paramilitary forces and civilian fishing fleets—represented a form of escalation that endangers regional crisis stability by bringing the parties just one small step away from military conflict on a regular basis.

Chinese participants, however, expressed concern about the U.S.-Japan alliance as an enabler of U.S. first-strike capability and about Japan's own rising militarism. They highlighted Japan's so-called southwestern wall in the Ryukyu Island chain and U.S.-Japanese cooperation in antisubmarine warfare, which could inhibit China's second-strike ability. Viewed from Beijing, the allies seem to exaggerate threats from North Korea and China's military to serve political ends or to justify investments in continued military preeminence. The allies'

active contestation of Chinese core interests sours political-military relations between them and has a negative impact on China's perception of strategic stability, since Beijing views these two aspects as closely linked under its broad definition for the latter. Some Chinese participants also expressed concern that Japan's missile defense investments, and joint development of missile defenses with the United States, could degrade China's nuclear second-strike ability to the point where it emboldens the United States to consider striking first with nuclear weapons.

Considering the role of Japan and the regional-nuclear connection led to multiple workshop discussions about mutual vulnerability in the U.S.-China nuclear relationship. Key points of debate included the extent to which mutual vulnerability is an accurate description in the U.S.-China nuclear balance, whether Washington accepts this as a reality and maybe even a contribution to stability,[6] the difference between mutual vulnerability and mutual deterrence,[7] and the impacts on mutual vulnerability by nuclear modernization, new prompt-strike conventional weapons, or cyber- and space-based capabilities. A few Japanese participants felt strongly that while some degree of U.S.-China mutual vulnerability might be unavoidable, if it rose to a level of thoroughly deterring U.S. nuclear use at the regional level, then this could be dangerous for Japan in ways explained by the stability-instability paradox.[8]

In Tokyo's opinion, the Asia-Pacific region suffers from an asymmetry of vulnerability. China and North Korea have acquired an invulnerable regional strike posture with road-mobile missiles, while Japan and South Korea lack any means to put them at risk. In China's case, this is combined with an increasingly large, sophisticated, and expeditionary conventional military capability. Beijing has expressed no interest in leveraging such theater dominance for tactical advantage, but some Japanese experts have argued that this military strength—together with China's economic influence—is an integral part of its coercion tactics in the region. Forward deployed U.S. forces and U.S. strategic strike capabilities counterbalance much of China's (and, to a lesser extent, North Korea's) regional advantage, but this would tip back in China's favor if U.S. nuclear forces are deterred out of the equation.

Mutual Vulnerability

Some American and Japanese participants highlighted the "potential desirability of instability," because the risk of escalation to the nuclear level can help improve deterrence at all levels (that is, all sides would worry about escalation), but there was no consensus on this point among the allies, and the Chinese disagreed with the premise. On the one hand, Washington has an incentive to take seriously China's nuclear arsenal and even accept a degree of mutual vulnerability, since it could foster restraint and help Beijing remain content with its current deterrent force and posture and refrain from more investments. On the other, Japan worries that too much U.S. deference to China could lead to

greater low-level conventional conflict in the region, which not only threatens Japan's interests but is also precisely what Washington and Tokyo fear could lead to nuclear war.

U.S. ambivalence toward (and Japan's disdain for) U.S.-China mutual vulnerability has Chinese specialists worried that the United States will look continuously for ways to expand its nuclear advantage vis-à-vis China through the use of missile defenses and new technologies that improve counterforce targeting and lower the threshold for nuclear use.[9] Chinese participants in the workshop warned of arms race instability as a result. Some also wondered if mutual vulnerability could be a sufficient foundation for strategic stability, given the trilemma for Washington of appealing simultaneously to Beijing and Tokyo while protecting its own national security. It is partly because of this lack of faith in mutual vulnerability that China seeks to supplement strategic stability with other concepts such as "new type of major power relations" and U.S.-China interdependence, "consensus and communication," and the nuclear taboo. While the American and Japanese participants acknowledged some potential value of these factors, they saw them as susceptible to failure when core interests conflict.[10]

Participants also discussed the complicating factors of cyberspace and other domains, as they relate to mutual vulnerability and strategic stability. One view of these issues, articulated by the American scholars David Gompert and Phil Saunders, is that defense innovation was, in some ways, making these issues so complex that their solutions were actually becoming simpler.[11] The confluence of outer space, cyberspace, air and seaborne autonomous systems (and some other realms) suggests that integrated attacks could become too complex to defend in the future, which means that mutual vulnerability could exist across all domains. In theory, because leading nations like the United States and China will always "choose to compete" in new domains—as one American noted—this exposure to rivals and such comprehensive vulnerability could become a major disincentive for conflict, which, in turn, should underpin stability. Workshop participants, however, did not give much confidence to this theoretical conclusion.

The Role of North Korea

Whatever efforts the United States, China, and Japan can make to address the mutual vulnerability conundrum, North Korea remains a likely spoiler, and this issue occupied a significant portion of workshop debate. Part of the problem is a lack of confidence that North Korean leadership shares the widely accepted norm of the nuclear taboo, which will drive the United States and Japan (and South Korea) to take increasingly dramatic passive and active defensive measures as North Korea builds its nuclear arsenal. These include several steps—such as missile defenses, new surveillance and reconnaissance deployments, new strike deployments, and use of cyber weapons—that are already

causing many Chinese specialists to doubt the adequacy of their second-strike capability. It might eventually include preemptive strikes against certain North Korea targets and/or a more operationally robust nuclear retaliation posture vis-à-vis North Korea to convince North Korean leader Kim Jong-un that any nuclear use by him will mean his country's quick annihilation.

Steps such as these will inevitably undermine U.S.-China arms control stability by stimulating countermeasures by Beijing, even if Chinese leaders understand that the underlying reasons for the allies' proactive steps are mostly related to North Korea. China could expand its nuclear stockpile and long-range missile force, modernize existing missiles by adding new features designed to foil missile defenses, and invest in cyber and/or space-based weapons to counter a perceived U.S. advantage. U.S. and Japanese workshop participants did discuss the possibility of modifying or scaling back certain types of defense deployments vis-à-vis North Korea, if this might alleviate some specific Chinese concerns and avoid a nuclear arms race, but the general conclusion was that such restraint was unlikely to be appreciated by China. In fact, Chinese participants complained that Beijing has already exercised restraint on various occasions (in the nuclear realm, with North Korea, and in the South and East China Seas), but such accommodation is rarely recognized by the United States and Japan. Such is the nature of restraint, which is usually underappreciated by an opponent and overvalued by oneself, but it is at least an area that lends itself to improvement through regular dialogue and modest trust-building measures.

Findings and Recommendations

The project's trilateral discussions for the first time allowed and encouraged experts from the United States, China, and Japan to directly exchange opinions on the special roles and concerns of Japan with regard to U.S.-China strategic stability. Although the participants were not able to reconcile all of their views on these issues, the workshop did yield some useful findings that would add considerable value for future dialogue.

An overarching takeaway from the project is the need and potential value of more consistent dialogue on U.S.-China strategic stability involving specialists (and policymakers, if possible) from all three countries. As noted above, the current lack of clarity in policy thinking about this topic provides an opportunity to contribute to new consensus building within these relatively small intellectual communities. More frequent dialogue might also help to reduce the high level of mutual distrust that permeates these diplomatic and security issues. There are several different aspects of strategic stability that should be discussed, and these can be addressed in complementary bilateral (that is, U.S.-China, Japan-China, and U.S.-Japan) and trilateral dialogues.

Two key issues discussed in the project include (1) whether or not China has a strategically significant nuclear retaliatory capability vis-à-vis the United States and (2) whether the United States should recognize this dynamic—thereby accepting it—or actively seek to limit such vulnerability. The former is a scientific judgment with a degree of uncertainty while the latter is a strategic choice. The participants generally agreed that the United States is vulnerable to Chinese nuclear retaliation, but they disagreed over how Washington should choose to respond, and the U.S.-Japan alliance is a driving factor behind this dynamic. This finding supports the importance of the project and highlights the need for more attention on the role of Japan in the issue of U.S.-China strategic stability.

A major Japanese concern about U.S.-China strategic stability comes from Tokyo's view that the regional conventional military backdrop is tilting out of balance to increasingly favor China. Japanese experts worry that U.S.-China strategic stability could lead to instability at the conventional level in Northeast Asia. If China and Japan could explore confidence building measures and crisis management tools in the conventional military domain, it could mitigate their security dilemma and might ameliorate Japanese resistance to U.S.-China strategic stability.

Future trilateral dialogues would also benefit from diverse teams of experts, including those with conventional military expertise. This can bring forward issues related to the nuclear-conventional nexus and the linkage to regional-intercontinental dimensions of strategic stability and escalation.

The topic of restraint in general is also underappreciated in these types of dialogues, in the sense that self-restraint or mutual restraint is difficult to measure and evaluate. Even if one country is taking a deterrence step that it considers the least aggressive option available, it is still changing the status quo and will likely be viewed by the other as an escalation of sorts. In this sense, some level of mutual transparency for internal decisionmaking could be useful, and this links to the broader issue of peacetime and crisis communication between the United States and China (and involving Japan). Greater intellectual exchange in bilateral and trilateral formats is required at both the Track I and Track II levels to minimize the inevitable misunderstandings and misinterpretations that will occur regarding such sensitive and often classified topics.

It was clear from the discussion that North Korea's nuclear and missile programs are the most immediate and severe threat to U.S.-China strategic stability because they would prompt allied countermeasures that could stimulate a further Chinese response. This makes North Korea a useful centerpiece for follow-on dialogue, possibly in a way that involves South Korean specialists as well. One goal in this case would be to highlight issues of crisis management, missile defense, or military posture and exercises that apply specifically to steps being taken by North Korea, implying that resolution of certain North Korean threats could result in a rollback of some countermeasures soon thereafter.

Future dialogues on U.S.-China strategic stability will also need to continue to address some traditional topics, for example, offense-defense balance, tactical weapons, and strategic warning. Emerging areas of cyber and space as they relate to nuclear issues, accurate signaling, and proportionality of responses are particularly fertile ground for additional discussion and possibly joint or collaborative research. Further clarification and agreement on vocabulary and definitions in future dialogues will also be useful, whether it relates to concepts of strategic stability, arms race stability, new great power relations, and the like, or more tangible terms for different nuclear weapon, missile, and missile defense characteristics.

Dialogue in various formats—bilateral, trilateral, and multilateral—will not eliminate some fundamentally conflicting views and the misalignment of perceived national interests among China, Japan, and the United States, but it can help to reduce the risk and the cost of ill-advised defense investments. Shifting geopolitics in East Asia and the North Korean nuclear threat are lifting strategic nuclear issues to a new level of salience for regional security, and traditional forums are poorly equipped to address them. A conscious effort by all parties to exchange views objectively and honestly consider each other's perspectives is the first step to constructively managing this new reality.

Notes

1. With the exception of Tong Zhao, Chinese and Japanese names are written in their native convention, with family names first.
2. This publication results from research sponsored by the Naval Postgraduate School's Project on Advanced Systems and Concepts for Countering Weapons of Mass Destruction (WMD), with funding from the Defense Threat Reduction Agency, under Assistance Grant/Agreement No. N00244-16-1-0048 awarded by the NAVSUP Fleet Logistics Center San Diego. The views expressed here are those of the author(s) alone and do not represent the official policies of the U.S. Navy or the U.S. Department of Defense.
3. See, for example, Elbridge A. Colby, Abraham M. Denmark, and John K. Warden, eds., "Nuclear Weapons and U.S.-China Relations – A Way Forward," Center for International and Strategic Studies, March 2013, http://csis.org/files/publication/130307_Colby_USChinaNuclear_Web.pdf; Lora Saalman, "China and the U.S. Nuclear Posture Review," Carnegie-Tsinghua Center for Global Policy, February 2011, http://carnegieendowment.org/files/china_posture_review.pdf; M. Taylor Fravel and Evan S. Medeiros, "China's Search for Assured Retaliation — The Evolution of Chinese Nuclear Strategy and Force Structure," *International Security* 35, no. 2 (Fall 2010): 48–87; Lu Yin, "Reflections on Strategic Stability," in *Understanding Chinese Nuclear Thinking*, ed. Li Bin and Tong Zhao (Washington, DC: Carnegie Endowment for International Peace, 2016), 127–48, http://carnegieendowment.org/files/ChineseNuclearThinking_Final.pdf; and Charles L. Glaser and Steve Fetter, "Should the United States Reject MAD? Damage Limitation and U.S. Nuclear Strategy Toward China," *International Security* 41, no. 1 (Summer 2016): 49–98, and follow on correspondences.
4. For the results of this Carnegie project see Li Bin and Tong Zhao, eds., *Understanding Chinese Nuclear Thinking* (Washington, DC: Carnegie Endowment for International Peace, 2016), http://carnegieendowment.org/2016/10/28/understanding-chinese-nuclear-thinking-pub-64975.
5. Lu Yin, "Reflections on Strategic Stability," in *Understanding Chinese Nuclear Thinking*, eds. Li Bin and Tong Zhao.
6. One U.S. workshop participant described "two schools of mutual vulnerability in the United States." One accepts it is a fact of life, while the second rejects it publicly out of sensitivity to allies. Within the second group there are some who seek active efforts to minimize U.S. vulnerability for U.S. advantage and to reassure allies. Another argued that there is a third school of thought (at least in the Obama era), that was not willing to challenge mutual vulnerability. "We did not develop a posture to negate China's nuclear force, but we were also not willing to deliver explicit reassurances . . . not because of Tokyo [i.e., for reassurance of Japan] but because of Beijing's view." The scholar explained that early efforts by the administration of president Barack Obama to signal reassurance to Beijing seemed to be received (by both China and Russia) as a sign of weakness and appeasement, prompting the Obama team to end that approach.
7. "Unacceptable damage" was another term discussed in the context of mutual vulnerability and mutual deterrence, differentiated from "assured retaliation," which made no judgment on how much of a second-strike capability was required to be an effective deterrent. One Chinese scholar noted that "in many cases, Chinese experts

use the term 'mutual vulnerability' interchangeably with the term 'mutually assured destruction.' The two terms are not clearly distinguished in the Chinese literature."

8. Michael Krepon succinctly summarized the "stability-instability paradox" in 2010 for Arms Control Wonk, "Adversaries possessing nuclear weapons would exercise caution to avoid major wars and any crossing of the nuclear threshold. At the same time, their 'insurance policy' of nuclear retaliation provided ample leeway to engage in crisis-provoking behavior, proxy wars, and mischief making." See, Michael Krepon, "The Stability-Instability Paradox," Arms Control Wonk, November 2, 2010, http://www.armscontrolwonk.com/archive/402911/the-stability-instability-paradox/. Krepon based his summary in part on *The Illogic of Nuclear Strategy* by Robert Jervis, who wrote "to the extent that the military balance is stable at the level of all-out nuclear war, it will become less stable at lower levels of violence." See, Robert Jervis, *The Illogic of American Nuclear Strategy* (Ithica, NY: Cornell University Press, 1984). Krepon also cites Glenn Snyder, among others; see, Glenn Herald Snyder, *Deterrence and Defense: Toward a Theory of National Security* (Princeton, NJ: Princeton University Press, 1961).
9. In fact, an influential group of U.S. scholars and former officials have warned the Trump administration that "China's expansionist goals and military modernization programs may well create additional nuclear requirements for the United States and the corresponding need to consider whether, when, and how to deploy additional capabilities . . ."; see, Keith B. Payne and John S. Foster, Jr., "A New Nuclear Review for a New Age," National Institute for Public Policy, April 2017, http://www.nipp.org/wp-content/uploads/2017/06/A-New-Nuclear-Review-final.pdf.
10. One American participant argued that "if we try to broaden the concept of strategic stability in a way that encompasses all of international relations, then it's never going to be reliable."
11. David C. Gompert and Phillip C. Saunders, *The Paradox of Power: Sino-American Strategic Restraint in an Age of Vulnerability* (Washington, DC: National Defense University Press, 2011).

APPENDIX 1

Perceptions of Sino-American Strategic Stability: A U.S. View

Linton F. Brooks

Introduction

This section is intended to provide background on U.S. views on issues related to U.S.-China strategic stability. The approach set forth below is that of a practitioner rather than an academic and is heavily influenced by the author's participation in several Track I.5 and Track II dialogues.[1]

The Evolution of the Concept of Strategic Stability

The United States' concepts of strategic stability were developed throughout the Cold War. Soviet acceptance of those concepts took longer, and the two sides never fully understood each other's thinking. Still, by the end of the Cold War, analysts in both the Soviet Union and the United States had a similar, clear understanding of the basic premises of strategic stability and of the importance of those principles in avoiding catastrophe. They understood that the concept was primarily bilateral and was primarily about preventing nuclear war. To foster such stability, the two superpowers sought policies, forces, and postures that met three criteria:

- In a time of great crisis, there is no incentive to be the first to use military force of any type, nuclear or otherwise ("crisis stability")
- In a crisis or conventional conflict, there is no incentive to be the first to use nuclear weapons ("first strike stability")
- Neither side believes it can improve its relative position by building more weapons ("arms race stability")

Because the goal of strategic stability is the prevention of war, especially nuclear war, it is important to recognize that any criteria are irrelevant unless there is at least some possibility of conflict between two states. Such states need not be enemies or even adversaries, but there must be some plausible path to war. Thus it makes little sense to speak of strategic stability between the United States and the United Kingdom or between China and Pakistan. Strategic stability exists when war is possible but made significantly less likely by the policies, forces, and postures the two sides adopt.[2] It is also important to remember that strategic stability is a two-player game; a single state cannot ensure stability.

Cold War strategic stability between the United States and the Soviet Union rested upon the back of mutual assured destruction. Because each side maintained forces that could survive a first strike and could inflict damage in retaliation that the attacker would find unacceptable, nuclear war became irrational. Each side worried about how many forces must survive and how much damage those surviving forces needed to be able to inflict, but the basic notion that stability depended on the mutual ability to inflict unacceptable damage in retaliation became the operating premise of both states.[3] Since a major conventional war in Europe could have—and very probably would have—resulted in nuclear escalation, both sides also avoided direct conventional war.

Since the end of the Cold War, many analysts have broadened the term "strategic stability" to a significant degree. This broadening is useful, but in relations between nuclear states most U.S. analysts assume that the Cold War definition of stability is still an important and central component of stability, although not necessarily sufficient.[4] At a minimum, ballistic missile defenses play a different role than they did throughout most of the Cold War when stability was based, in part, on restricting such defenses under the Anti-Ballistic Missile Treaty. With legal restraints on deployment removed, defenses must be regarded differently when assessing modern strategic stability.

In addition, most analysts assume that developments in space and, especially, cyberspace must be taken into account even under a narrow, Cold War–like definition of strategic stability. For example, cyber capabilities interfering with nuclear command and control would obviously be hugely destabilizing, especially if their origin was uncertain. Interfering with space assets could be particularly destabilizing if it was intended to interrupt command and control or to degrade early warning, increasing the risk that the aggressor might believe a disarming first strike could succeed. As major powers make increasing use of space, both space control and counter-space capabilities will take on increasing importance, and there is also the possibility of a destabilizing arms race in space capabilities.

What has been described thus far is regarded by most American analysts and practitioners as a narrow definition of stability. While some find such a narrow definition adequate (and all find it useful in specific cases), many would expand it to place greater emphasis on conventional military operations, especially as they relate to the nuclear balance. For the United States and China, this means primarily taking into account maritime and air forces. The logic is simple. Nuclear war will not happen in a vacuum but will almost certainly result from escalation of a conventional conflict. Stability therefore requires reducing the chance of such conflict. This leads to the broader definition that will be used in this section, one adapted from Tom Fingar: Strategic stability means a situation in which war of any kind (but especially nuclear war) between major powers is unlikely and rule-based behavior is the norm.[5]

Both broad and narrow concepts have utility. The logic of expanding the concept of strategic stability to take greater account of conventional military

operations is clear and straightforward. Unfortunately, such expansion in practice is conceptually difficult, because there is no obvious threshold below which conventional military operations need not be considered. This tends to weaken the coherence of the concept, and therefore makes agreement between two states and the implementation of agreed measures more challenging and less likely. Whatever definition is chosen, it is important to be clear about how the term is being used in any specific discussion. Otherwise it can lose all meaning and simply become a synonym for overall foreign and military policy.

A few analysts would further expand the concept to consider long-term geopolitical issues. This may be particularly appropriate in the case of relations between a rising power like China and a status quo power like the United States. The history of interactions between rising and status quo powers is mixed, with half the cases examined in one major academic work leading to war.[6]

Multilateral Approaches to Strategic Stability

Thus far, this section has spoken of strategic stability in exclusively bilateral terms. It is common in the United States to call for a consideration of "multinational strategic stability." Despite frequent calls for a generalized approach, no such approach has emerged and none is likely. As one recent government-sponsored report put it:

> Standing alone, the phrase "multi-national strategic stability" is of limited value. The phrase implies that the stability of the international system can be described in an abstract and generalized manner independent of the specific context at issue. We disagree. In our view, multi-national strategic stability is largely the sum of stability between many pairs of nuclear weapons states.[7]

There is one important exception to this conclusion with respect to Sino-American strategic stability. U.S. deployments of ballistic missile defense systems against threats to the U.S. homeland present China with what has been called a security trilemma in which actions taken against one state (for example, North Korea or Iran) are perceived as directed against a third state (in this case, China).[8] The implications of this trilemma are discussed below. Regional defenses, such as the Terminal High Altitude Area Defense (THAAD) system, should not in principle pose a similar trilemma because they are not capable of dealing with strategic-range missiles.

Given the lack of an agreed definition, many analysts and government officials simply use the term "strategic stability" without definition based on an assumption that "we will know it when we see it." Former U.S. president Barack Obama's administration, for example, used the term extensively and made force structure decisions based on a detailed description of strategic stability, but never formally defined the term as it applied to China. A potentially attractive variant of this approach (although one that has gained few adherents) is to

list characteristics that contribute to stability and use those characteristics as a guide to stable relations without necessarily seeking to define stability itself. [9]

U.S. Consideration of Chinese Perspectives

As noted earlier, strategic stability cannot be assured by the actions of a single state. This implies that U.S. experts must carefully consider (or at least understand) Chinese concerns. The U.S. record on this is mixed. A recent publication by a well-placed Chinese expert notes that in recent times, "Chinese policy analysts and scholars have focused primarily on four factors: the nuclear taboo, nuclear blackmail, U.S.-China interdependence, and consensus and communication."[10]

These factors do not routinely appear in U.S. analyses. Yet how important is each of them?

Nuclear taboo. While the term is seldom used in the context of strategic stability, the view that nuclear weapons are a last resort rather than a first resort is near-universal in the U.S. analytic community, as is the understanding that breaking more than seventy years of tradition of non-use would be a momentous decision.

Nuclear blackmail. Many U.S. analysts would quibble with specific Chinese historical examples of nuclear blackmail (the Vietnam War, for example). Virtually all, however, would doubt the utility of using nuclear weapons for compellence rather than for deterrence. Most assume that nuclear blackmail lacks credibility.

Interdependence. All Americans recognize the extensive Sino-American economic interdependence. But large numbers (including the present author) are skeptical that this alone can provide stability, in part because of the various challenges to stability described later in this section.

Consensus and communication. American experts would accept the importance of this factor, but might disagree with the author's upbeat assessment of the degree to which both strong consensus and good communications characterize the current relationship.

Strategic Stability With China: Recent Experience

The relationship between the United States and China may well be the most important geopolitical determinant of global international relations in the twenty-first century. If strategic ability as a concept is only relevant where conflict is possible but not inevitable, it is clearly—and increasingly—relevant in Sino-American relations. Given this fact, a fundamental question for both academic theorists and government practitioners is whether or not the concept of strategic stability can be useful in analyzing and managing this crucial relationship. Here it is important to distinguish between strategic stability as an

internal analytic tool and strategic stability as a useful organizing principle for international communications. The experience of the past few years points in different directions for these two potential uses.

From a U.S. perspective, strategic stability remains a vital principle for internal analysis, despite the multiple senses in which the term is sometimes used. In the 2010 "Nuclear Posture Review Report," the lens of strategic stability was used extensively. It was cited as the basis for force posture decisions from retaining the strategic triad (intercontinental ballistic missiles, submarine-launched missiles, and heavy bombers) to deploying all ICBMs with only a single warhead. The crisis component of strategic stability was used in rejecting suggestions for de-alerting, despite the president's pre-election interest in the concept. Such stability was an important—perhaps the most important—concept dominating the review.[11]

In contrast to its utility as an analytic tool, strategic stability largely failed as a structure for organizing discussion with China. This was not for lack of trying. The review was explicit in calling for a dialogue organized around stability, stating:

> With China, the purpose of a dialogue on strategic stability is to provide a venue and mechanism for each side to communicate its views about the other's strategies, policies, and programs on nuclear weapons and other strategic capabilities. The goal of such a dialogue is to enhance confidence, improve transparency, and reduce mistrust. As stated in the 2010 Ballistic Missile Defense Review Report, "maintaining strategic stability in the U.S.-China relationship is as important to this Administration as maintaining strategic stability with other major powers."[12]

The administration sought to reassure China of the importance it attached to the relationship between the two countries. Throughout the "Nuclear Posture Review Report," China was given equal billing with Russia in discussions of strategic stability. As Brad Roberts, an engaged Department of Defense official, stated, an administration priority was to

> put the US-China nuclear relationship on a more positive footing. That relationship has long been marked by mutual suspicion and mistrust. . . . The Obama administration . . . embraced strategic stability with China as an organizing concept . . . to signal that it saw the strategic relationship with China much as it saw the strategic relationship with Russia—that is, a relationship in which we could not rule out the possibility of a military flashpoint but where the political emphasis is on shared interests, for example in stability, rather than on divisive ones.[13]

Despite the considerable merits of this approach, it was a failure. After years of trying, the United States was unable to engage China in meaningful government-to-government discussions on strategic stability or nuclear weapons issues generally. In the Track I.5/Track II discussions that the Chinese

government appeared to regard as an effective substitute for government-level discussions, Chinese analysts often claimed that strategic stability as a concept was only appropriate between nuclear equals like the United States and the Soviet Union or Russia. Chinese participants have become more willing over time to use strategic stability terminology, but it is unclear that the two sides are converging on a common understanding of what the term means.[14] Further, seeking a dialogue based on Western terms and concepts that the Chinese do not use internally slows the process of understanding the differences between Chinese and American thinking.

Challenges to Sino-American Strategic Stability

No matter how strategic stability is defined, it faces significant challenges—challenges that become greater in both numbers and importance the more one expands the meaning of strategic stability. Five are particularly worth discussing.

Misunderstanding of Each Other's Plans, Intentions and Actions

In principle, the knowledge that both sides could be devastated by a nuclear exchange should be sufficient to ensure stability. It is not. That is because escalation can spin out of control as each side takes steps that are misinterpreted by the other. As a result, there is no concept of bilateral strategic stability that will be attainable if the two sides fundamentally misunderstand each other. Stability requires above all an understanding of how the United States and China each view the military dimension of their relations.[15] It is widely believed among U.S. experts that transparency leads to predictability and that predictability leads to stability. It is therefore unfortunate that China has interpreted past calls for transparency as efforts to get information on force structures and disposition that could be used to weaken China's military capability. This is not what the United States is or should be seeking from China's government. Instead, what Americans believe is necessary is mutual understanding of doctrine, long-range plans, and the approach to managing crises. Ideally, through detailed discussions on these topics, "both sides gain knowledge about each other's strategy such that they gain increased confidence that neither will dramatically alter the relationship."[16] Current government-to-government discussions are not conducted in sufficient depth to lead to such understanding.[17]

National Ballistic Missile Defense

The United States has concluded that its security requires the ability to defend its homeland against ballistic missile attack from North Korea or Iran. It believes that effective defense against the relatively crude, first generation missiles of these two states is technically feasible and that U.S. limited understanding of decisionmaking processes of these two governments makes it imprudent to depend entirely on threats of retaliation to counter threats to the homeland.[18]

China fears that such defenses threaten (and may be intended to threaten) its strategic deterrent. The 2010 "Nuclear Posture Review Report" and "Ballistic Missile Defense Review Report" were intended to make it clear that this was not the case. For example, page 13 of the "Ballistic Missile Defense Review Report" states

> the homeland missile defense capabilities are focused on regional actors such as Iran and North Korea. While the [ground-based missile defense] system would be employed to defend the United States against limited missile launches from any source, it does not have the capacity to cope with large scale Russian or Chinese missile attacks, and is not intended to affect the strategic balance with those countries.[19]

Despite these attempts at reassuring China, Chinese experts have focused on their understanding of capabilities rather than on U.S. statements of intent. Chinese concerns have been increased by U.S. reluctance to acknowledge that a condition of mutual vulnerability exists between the two states (although the above-quoted statement comes close) for fear that such a step could undermine allied confidence in the U.S. extended deterrent.[20]

National ballistic missile defense is likely to become more contentious because of recent changes to the Ballistic Missile Defense Act of 1999. Until recently, that act established that it "is the policy of the United States to deploy as soon as is technologically possible an effective National Missile Defense system capable of defending the territory of the United States against *limited ballistic missile attack*." (Emphasis added.) In December 2016, Congress amended this law to revise the policy to read "to maintain and improve an effective, robust layered missile defense system capable of defending the territory of the United States, allies, deployed forces, and capabilities against the developing and increasingly complex ballistic missile threat."[21] In the U.S. system, annual authorization acts provide policy aspirations, not actual funding, so it is uncertain how big a difference this action will actually make, but it is virtually certain to increase Chinese concerns.

Cybersecurity Considerations

It is virtually certain that during a crisis or low-level conflict, both parties will seek information on what the other is planning, including through use of cyber techniques to gather information. It will be important that these efforts not appear to be precursors to attempts to disable military command and control systems. Such actions would imply an imminent attack and could lead the other side to act preemptively. Especially destabilizing would be any indication that one side was seeking to interfere with nuclear command and control systems. U.S. systems for controlling nuclear weapons have elements that are separate from other military command and control. Many U.S. analysts believe that this is not true in China. If that is correct, and the two countries are ever

in a military confrontation, the results could pose serious risks to stability and escalation management.[22] The U.S. way of war is to attack conventional command and control systems. Some in China may believe, therefore, that having a common system will lead to U.S. restraint. Perhaps it will, but there is an enormous risk that instead of restraint, the Chinese policy will lead to unintended escalation that is in no one's interest.

Conventional Forces, Especially Maritime Forces

China's 2015 white paper on military strategy placed new emphasis on the roles of the People's Liberation Army (PLA) Navy and the People's Liberation Army Air Force.[23] The references to the navy were brief but important:

> In line with the strategic requirement of offshore waters defense and open seas protection, the PLA Navy (PLAN) will gradually shift its focus from "offshore waters defense" to the combination of "offshore waters defense" with "open seas protection," and build a combined, multi-functional and efficient marine combat force structure. The PLAN will enhance its capabilities for strategic deterrence and counterattack, maritime maneuvers, joint operations at sea, comprehensive defense and comprehensive support.

In a later section on "maintaining constant combat readiness," the white paper stated that "the PLAN will continue to organize and perform regular combat readiness patrols and maintain a military presence in relevant sea areas." Many U.S. analysts regarded these words as especially significant, given China's extensive operations in the South China Sea. U.S. analysts fear the aggressive nature of such operations could result in confrontation with U.S. allies with potentially significant implications for strategic stability. In turn, Chinese experts have long objected to U.S. surveillance operations within China's exclusive economic zone, which they view as inconsistent with international law, a conclusion the United States rejects.[24]

Geopolitical Issues

Finally, in the coming decades, geopolitical concerns could pose major challenges to strategic stability. As noted earlier, most U.S. analysts would not include long-term geopolitics within the definition of strategic stability, although these same analysts recognize that whether China's rise can come without a confrontation with the United States may be the single most important long-term challenge of the twenty-first century. Global operations by the U.S. Navy are an integral and vital part of U.S. national security strategy and U.S. support to allies, including in the Pacific. The United States fears that China seeks some form of regional hegemony that will be inconsistent with such global operations. Were China to seek to establish some form of Monroe Doctrine with Chinese characteristics, the threat to stability could be enormous.

Alternate Approaches to Stability

Most U.S. discussions of alternate approaches to stability have been in the context of relations with the Russian Federation. Strategic stability between Russia and the United States continues to rest on the foundation of mutual assured destruction. Because this appears inconsistent with the partnership that both sides sought to forge in the past (and that many still hope for, despite present political tensions), there have been efforts in both countries to find an alternate model for the nuclear relationship. In the United States, the concept of "mutual assured stability" was put forward as a possible model. A report by the State Department's International Security Advisory Board described the concept this way:

> A relationship among nations . . . in which nuclear weapons are no longer a central feature for their security, deterrence based on nuclear destruction is no longer necessary, and the likelihood of nuclear war is treated as remote because their relationship is free of major, core security issues such as ideological, territorial, or natural resource competition issues, and the benefits from peaceful integration in economic, political, and diplomatic spheres provide a counterbalance to the perceived advantages of nuclear conflict.[25]

The Russian effort to find an alternate model that has received the greatest visibility in the West was proposed by the scholar Alexey Arbatov and retired Major General Vladimir Dvorkin in their 2006 book *Beyond Nuclear Deterrence: Transforming the U.S.-Russian Equation*—in which they call for moving beyond mutual assured destruction as a basis for the U.S.-Russia relationship. Their plan is based on a three-step approach:

> The first of the three avenues toward the end of nuclear deterrence is to "de-alert" and further reduce the Russian and American nuclear forces. The second is to develop and deploy a joint ballistic missile early warning system. . . . The third is to develop and deploy joint [ballistic missile defense] systems. Initially, the second and third avenues would be limited to nuclear and missile proliferation threats, but eventually—in parallel with transformation of the nuclear forces of both sides—they would embrace a growing part of the strategic assets of the two powers . . . and would transform their present mutual nuclear deterrence into a qualitatively new type of strategic relationship.[26]

Neither the Russian nor the American approach has captured the imagination of either government and thus there has been no progress in transforming the relationship between the two states beyond one based in part on mutual assured destruction. This result was probably inevitable, at least with respect to Russia and the United States. Mutual assured destruction is not a policy to be embraced or rejected, but an inescapable fact to be managed. Russo-American strategic stability continues to rely in part on the fact that both Russia and the

United States have the ability to absorb an attack and retaliate in a manner that is unacceptable to the attacker, thereby making the attack pointless.

China has officially suggested an alternative organizing principle for overall relations through an analogue to mutual assured stability called a new model of major-country relations.[27] Like mutual assured stability, this model seeks to change the political conditions that can lead to conflict. It is based on three principles: no conflict or confrontation, mutual respect, and win-win cooperation. The heart of the proposal is mutual respect, which involves respecting the core interests of one another. From a U.S. perspective, this model may fail when core interests conflict. Examples include the conflict between Chinese sovereignty issues over Taiwan and the South China Sea and U.S. core interests in meeting international obligations (such as those to Taiwan) and maintaining freedom of navigation, especially for the U.S. Navy.

Chinese experts in Track I.5 and Track II dialogues often suggest another alternative model combining an unprovocative declaratory policy (no first use) and a minimalist modernization plan (known as "lean and effective"). These experts argue that their model will keep nuclear weapons from becoming a source of competition and political friction.[28] Neither of these models has gained much U.S. support. It is unlikely that a reasonable alternative organizing principle for overall relations can be found, although there may be better concepts for organizing a strategic dialogue.

Conclusion

There is neither full agreement within the United States nor is there agreement between the United States and China on a common definition of strategic stability. The term has had limited value in Sino-American discussions, both official and unofficial. Yet there is clearly an objective reality buried in the definitional confusion. It may be that a precise definition is unnecessary. Former U.S. president Dwight Eisenhower, who commanded allied military forces in Germany during the Second World War, was fond of quoting an Army aphorism: "Plans are worthless, but planning is everything." He knew that no detailed plan would be adequate for the complexities of conflict, but he also knew that the process of developing plans was invaluable in surfacing issues and preparing individuals to deal with them. In the same way, analysts in both countries should continue to work to understand stability even though no definition can fully capture the complexities of the continuously evolving relationship. Such discussions may help analysts and policymakers in the United States and China both to understand one another's perspectives and to deal more effectively with conflict and crises should they occur. If so, it will be effort well spent.

Notes

1. While this paper is based on my experience both within government and in unofficial dialogue, these are personal views and do not necessarily reflect the official position of the U.S. government, the Carnegie Endowment for International Peace, or any organization with which I am affiliated. I am grateful to Elbridge (Bridge) Colby, John Harvey, Micah Lowenthal, Mira Rapp-Hooper, James Schoff, Brad Roberts, and Heather Williams for comments on an earlier draft and, in the case of Brad Roberts, for allowing me to participate in a series of workshops on stability that has helped shape my thinking. I alone am responsible for the use I have made of their insights.
2. Although strategic stability is best analyzed on a bilateral basis, because survivable second-strike strategic forces are a requirement for strategic stability, the existence of such forces can foster a degree of stability with multiple potential adversaries.
3. The 1983 Strategic Defense Initiative by then U.S. president Ronald Reagan's administration (popularly referred to as "Star Wars") sought to change the basis of stability through deploying a highly effective national missile defense that would deny the attacker confidence of the effectiveness of an attack. This effort proved technically and financially difficult (some would say infeasible) and was abandoned when the Cold War ended.
4. For a discussion of the multiple options often considered within the U.S. analytic community, see Elbridge A. Colby and Michael S. Gerson, eds., *Strategic Stability: Contending Interpretations* (Carlisle, PA: U.S. Army War College Press, 2013).
5. This section omits discussion of rule-based behavior because U.S. thinking (or at least the thinking of the present author) on this aspect of stability remains rudimentary. An example of a threat to stability from lack of rule-based behavior might be China's rejection of the ruling by the Law of the Sea tribunal on the South China Sea. An example where stability is threatened by failure to agree on the rules might be the differing U.S. and Chinese views of what military activities are allowed in the exclusive economic zone.
6. John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York, NY: W. W. Norton, 2014). Mearsheimer's conclusions on China are also set forth separately in "Can China Rise Peacefully?" *National Interest*, April 8, 2014.
7. International Security Advisory Board, "Report on the Nature of Multilateral Strategic Stability," U.S. Department of State, April 27, 2016, https://www.state.gov/t/avc/isab/258528.htm. The report notes there are some exceptions, such as the China-India-Pakistan triangle, where relations between any pair of states are influenced by the third. For example, if China increases its nuclear forces in a manner that India believes requires a response, Pakistan may respond to India's action by increasing its own forces. Another example is the relationship among China, Russia, and the United States, where both Russia and the United States are reluctant to reduce their strategic forces to a level at which China might attain parity or at least might alter the strategic balance.
8. The term and the concept come from Mira Rapp-Hooper. See Linton Brooks and Mira Rapp-Hooper, "Extended Deterrence, Assurance, and Reassurance in the Pacific During the Second Nuclear Age" in Ashley J. Tellis, Abraham M. Denmark,

and Travis Tanner, eds., *Strategic Asia 2013–14: Asia in the Second Nuclear Age* (Washington, DC: National Bureau of Asian Research, 2013).

9. For an example (in which the present author participated), see "Report on the Nature of Multilateral Strategic Stability."
10. People's Liberation Army Colonel Lu Yin, "Reflections on Strategic Stability," in Li Bin and Tong Zhao eds., *Understanding Chinese Nuclear Thinking* (Washington, DC: Carnegie Endowment for International Peace, 2016).
11. Department of Defense, "Nuclear Posture Review Report," April 2010.
12. "Nuclear Posture Review Report," 51.
13. Brad Roberts, "Major Power Strategic Stability After the 2009 Nuclear Posture Review" (informal remarks to a Workshop on Re-Conceptualizing Strategic Stability, Institute for National Security Studies, U.S. Air Force Academy, Colorado, June 4–6, 2015).
14. These conclusions are based on the author's personal participation in three different annual Track I.5 and Track II dialogues over the past nine years. Although U.S. analysts vary slightly in their use of the terms, in this paper Track I.5 refers to discussions involving both government and nongovernment experts, with the government officials ostensibly participating in a personal capacity only. In contrast, Track II discussions involve only individuals not currently serving in governments, although many have prior government service. In the paper cited in the previous note, Brad Roberts points out that because "China has rejected official dialogue on strategic stability, the United States has not had to do its homework on what such a dialogue might encompass." As a result, American officials are less able to deal with the challenges to stability described below.
15. For a recent analysis of risks in the Chinese understanding of escalation, see Burgess Laird, "War Control: Chinese Writing on the Control of Escalation in Crisis and Conflict" (Washington, DC: Center for a New American Security, 2017). In contrast to the argument set forth below, Laird suggests that the study of Chinese writings is better than increased dialogue as a mechanism for understanding Chinese thinking.
16. Robert L. Pfaltzgraff Jr., "China–U.S. Strategic Stability" (paper presented at the Carnegie International Nonproliferation Conference, Washington, DC, April 6–7, 2009).
17. The Chinese government appears to favor such discussions occurring in unofficial (Track I.5 or Track II) channels. These have led to some useful understandings, but few Americans regard them as an adequate substitute for an official dialogue.
18. The United States is not asserting that these states cannot be deterred, but rather that U.S. uncertainty about their approaches to gathering and processing information, their limited understanding of the United States, and the opacity of their decisionmaking combine to raise doubts about U.S. understanding of how such deterrence can be managed.
19. U.S. Department of Defense, "Ballistic Missile Defense Review Report," February 2010, https://www.defense.gov/Portals/1/features/defenseReviews/BMDR/BMDR_as_of_26JAN10_0630_for_web.pdf.
20. Some U.S. analysts believe that acknowledgment by the United States of mutual vulnerability with China would be a strategic error. This view is based on a belief that China seeks to exploit perceived weakness. Pfaltzgraff, 2009.
21. National Defense Authorization Act for Fiscal Year 2017 Section 1681 amending Section 2 of the National Missile Defense Act of 1999 (Public Law 106–38).

22. A similar concern would arise from co-locating People's Liberation Army Rocket Forces units with nuclear and conventional missions such that an attack on conventional forces could be misperceived as an attempt at eliminating China's nuclear retaliatory capability.
23. The State Council Information Office of the People's Republic of China, *China's Military Strategy* (Beijing, 2015), http://www.chinadaily.com.cn/china/2015-05/26/content_20820628.htm.
24. Chinese reaction to aircraft surveillance led to a midair collision and a major international incident it 2001. See Shirley A. Kan, "China-U.S. Aircraft Collision Incident of April 2001: Assessments and Policy Implications," Congressional Research Service Report for Congress, October 10, 2001, https://fas.org/sgp/crs/row/RL30946.pdf.
25. International Security Advisory Board, "Report on Mutual Assured Stability: Essential Components and Near Term Actions," U.S. Department of State, August 14, 2012.
26. Alexey Arbatov and Vladimir Dvorkin, *Beyond Nuclear Deterrence: Transforming the U.S.-Russian Equation* (Washington, DC: Carnegie Endowment for International Peace, 2006).
27. Chinese Foreign Minister Wang Yi, "Toward a New Model of Major-Country Relations Between China and the United States" (speech at the Brookings Institution, Washington, DC, September 20, 2013).
28. I am indebted to Brad Roberts for reminding me of this approach.

APPENDIX 2

U.S.-China Strategic Stability and the Impact of Japan: A Chinese Perspective

Tong Zhao

Chinese Understandings of Strategic Stability

There has been a long international debate about how to define and understand the term "strategic stability."[1] In the case of China, strategic stability is not a new term. Over the past few decades, the *People's Daily*—the most important official newspaper in China—has published commentaries and editorials that touch upon the issue of strategic stability.[2] However, the traditional Chinese understanding of strategic stability is not completely in line with Western perspectives. The Chinese have traditionally taken a much broader view of strategic stability that encompasses not only nuclear relations but also political-military relations more generally.[3] They have referred to strategic stability as a general state of balance—including military, alliance, and economic stability, and other dimensions.[4] This very general and abstract approach toward strategic stability has been a major obstacle to Chinese experts and their Western counterparts trying to precisely understand each other's nuclear policies.

When China's nuclear and strategic communities were introduced to Western literature on deterrence and strategic stability, they found the Western analytical framework useful in academic and policy research and began to incorporate it into China's domestic discussions. Since then, Chinese analysts have written and published a relatively large number of papers to apply and promote the new analytical framework for understanding nuclear stability. These authors include experts from nuclear defense industry,[5] the military,[6] the foreign ministry's research institutes,[7] think tanks,[8] and university research centers.[9]

Today, although there is still debate about the precise definitions of certain terms,[10] many Chinese analysts are comfortable examining the security implications of specific nuclear policies by looking at their potential impact on crisis stability and arms control stability—the two main components of strategic stability in Western literature.[11] As these concepts are accepted and embraced by a wider circle of policymakers and academic analysts, more Chinese experts are using them to study the security implications of new military developments—both in the United States and elsewhere—on Chinese nuclear deterrence and regional stability, including the impact of missile defense on nuclear relationships.[12] In previous debates on deep nuclear reductions, Chinese experts have also used these concepts to formulate policy recommendations and to explore how strategic stability will change as global nuclear stockpiles continue to decrease.[13]

Chinese nuclear experts view the maintenance of a secure second-strike capability as the cornerstone of China's deterrent and the fundamental guarantee of national security. Accordingly, China appears fully committed to maintaining a mutual vulnerability relationship with its nuclear rivals,[14] and views it as a necessary condition for achieving strategic stability.[15]

After this narrower concept of strategic stability was accepted by the Chinese nuclear community, it began to be incorporated into official Chinese rhetoric. Starting in the late 2000s, Chinese official statements and documents began to refer to strategic stability in the same manner.[16]

Although many experts in China's nuclear community have embraced the narrow definition of strategic stability prevalent in the West, they generally do not like to equate the type of strategic stability employed by United States and China to the relationship between the United States and Russia. The U.S.-Russia dynamic implies a Cold War–style strategic rivalry, whereas Chinese experts believe the U.S.-China strategic relationship is far from being entirely adversarial. They also point out that U.S.-Russia strategic stability is based on a general balance of military power that includes nuclear weapons. In comparison, there is considerable disparity between the nuclear capabilities of the United States and China.[17]

Some Chinese scholars have also questioned certain aspects of and proposed ways to improve the Western definition of strategic stability. For example, Li Bin and Nie Hongyi from Tsinghua University suggest that the existing definition of strategic stability does not include other important elements that also have implications for crisis stability and arms race stability. They argue that strategic stability should involve four elements: in addition to the two elements included in the prevalent definition—crisis stability and arms race stability—they include the firmness of nuclear taboo and strategic mutual confidence and communications. They point out that nuclear taboo and strategic communications also have important influence on crisis stability and arms race stability but have not been incorporated into existing definitions in the Western literature.[18]

Arms Race Stability

China's leaders place a high degree of importance on the credibility of China's nuclear deterrence, but China has not traditionally had a robust analytical framework to answer the question of "how many is enough." China's top leaders intended to build a "lean and effective nuclear force" but did not explain what this meant in practice.[19] Mao Zedong, for example, had the perception that only a few nuclear weapons would be necessary to deter the United States from using nuclear weapons against China. In recent decades, however, the Chinese nuclear community has started to adopt the concept of mutual vulnerability from Western literature, using it to understand qualitative and quantitative requirements for Chinese nuclear capability. Concepts such as the threshold of unacceptable damage have been used to examine the numerical requirement for Chinese nuclear force development.[20]

Drawing mostly on the U.S. framework, Chinese experts have also conceptualized the credibility rationale behind China's nuclear development and force posture. They have illustrated the role that "first-strike uncertainty" plays in China's nuclear deterrence and pointed out potential areas in China's nuclear development and operation that could be more transparent.[21] It is argued, for instance, that as China deploys more road-mobile missiles, it does not need to rely heavily on numerical ambiguity to obtain a high level of survivability. Instead, China could rely more on geographical ambiguity. It is also suggested that China could be more transparent about mid-level (more operational) nuclear doctrines that would give outsiders a deeper understanding of the guiding principles of Chinese nuclear posture without revealing sensitive details of Beijing's nuclear operations.

With that said, China's confidence in its second-strike capability faces increasing challenges from new military technologies. During the Cold War, whether mutual vulnerability existed between the two nuclear rivals could be relatively easily determined by modeling various nuclear exchange scenarios to see if sufficient nuclear weapons would survive after absorbing a nuclear first strike. Strategic missile defense was limited by the Anti-Ballistic Missile Treaty (ABM) and therefore did not significantly affect the nuclear calculations until toward the end of the Cold War. In comparison, today's nuclear equation is much more complex. Long-range missiles have become increasingly accurate and are now capable of conducing counterforce strikes with small-yield nuclear warheads that do not generate substantial collateral damage. Technologies—such as the burst-height-compensating super-fuze and advanced computer codes that can quickly compensate for failed missile launches during a disarming strike—contribute greatly to the United States' capability to execute a nuclear first strike.[22] Furthermore, nuclear weapons are no longer only vulnerable to nuclear strikes, but also a wide range of non-nuclear military capabilities that could potentially threaten the survivability of nuclear weapons. Conventional prompt-strike weapons, for instance, are potentially capable of striking mobile missile vehicles and nuclear command and control systems. Advanced space-based surveillance and reconnaissance assets further enhance the capabilities of conventional precision strikes. The possibility of using sophisticated cyber attacks to undermine nuclear command and control systems and to disable missile launches also add to one's concern about the reliability of second-strike capability. On top of that, advanced missile defense technologies are becoming available and can further neutralize the effectiveness of any survived nuclear retaliatory capabilities. China has to include all of these new technologies in its calculations to evaluate the existence of the mutual vulnerability relationship between itself and its nuclear rivals.

In the case of missile defense, existing technologies face major challenges, such as the inability to reliably distinguish real warheads from decoys and chaffs, as well as the difficulties imposed by saturation attacks. U.S. officials point to the technical limits of the existing missile defense systems and the

small stockpile of currently deployed interceptors as hard evidence that U.S. missile defense poses no real threat to China's nuclear deterrent. However, what worries China is the perceived possibility that future development of missile defense technologies could achieve rapid breakthroughs and quickly become much more effective and efficient than existing systems. Such concerns are not totally unreasonable. For instance, the U.S. Missile Defense Agency's recent investment into developing the so-called Multi-Object Kill Vehicle may radically improve the United States' missile defense capability in the future.[23] Sudden technological breakthroughs like this are not completely predictable and do not always leave sufficient time for rival countries to adopt countermeasures. As a result, such uncertainties make it almost impossible for Washington to reassure Beijing about the innocuousness of its missile defense.

Geographical reality further complicates the situation. China is located right next to North Korea, and the United States has a policy of developing and deploying missile defense to protect itself and its allies from North Korean missile threats. However, given the geographical proximity between North Korea and China, any U.S. strategic missile defense system that can intercept North Korean intercontinental ballistic missiles (ICBMs) launched at the continental United States would likely also be capable of engaging Chinese ICBMs, especially if Chinese ICBMs are deployed in or close to the northeast part of the country. In addition, the numerical gap between the stockpiles of North Korean and Chinese ICBMs may be narrowed if North Korea quickly builds up its ICBM forces in the future. Currently, China is believed to possess between forty-five to fifty-three ICBMs.[24] North Korea has publicly shown that it possesses at least several KN-08 and KN-14 ICBMs, although North Korean ICBMs haven't been successfully flight tested to the extent of their range. China's view has always been that only a small portion of its ICBMs would survive a first strike. In this case, the number of survivable Chinese ICBMs may be similar to that of North Korean ICBMs. Therefore, it would be very difficult, if not impossible, for the United States to deploy a strategic missile defense system that threatens only North Korea but not China.

To address the threat posed by missile defense to the U.S.-China nuclear relationship, a Chinese expert once proposed that the United States commit to a qualitatively and quantitatively limited missile defense system in return for China putting a cap on its nuclear stockpile.[25] This proposal was turned down by both Chinese and U.S. experts. One important reason was that it would be very difficult for both actors to agree on what would constitute reasonable respective limits on each side because of dramatically different perceptions about the impact of U.S. missile defense on Chinese nuclear deterrence.

This is just one example of how a single additional variable—missile defense—in the nuclear equation could greatly complicate relevant players' calculations and make it exponentially more difficult for them to agree on what a mutual vulnerability relationship should look like, due to the very different compositions of and various uncertainties associated with their respective

strategic capabilities. Today, nuclear weapon states may have to take all relevant variables into consideration, including conventional prompt-strike weapons, advanced space-based surveillance and reconnaissance capabilities, offensive cyber capabilities, and counterspace weapons, among others. All these new and non-nuclear capabilities can, in one way or another, affect the survivability and effectiveness of nuclear weapons and are therefore drawing serious concerns from usually very risk-averse nuclear planners and strategists. The key question is whether it is feasible for nuclear weapon states to continue relying on the maintenance of mutual vulnerability relationships as the basis for strategic stability. So far, China seems very much committed to maintaining a highly survivable and reliable second-strike capability into the long-term future, despite all potential challenges posed by new technologies. Given the increasing difficulty of reaching common understandings between nuclear rivals on how to maintain mutual vulnerability, nuclear weapon states—including China—will likely develop their strategic capabilities based on their own understanding and predictions of future balances of capabilities across multiple domains. The result may be an intensified security dilemma and arms race.

Crisis Stability

Crisis stability was not something China's traditional security thinking focused upon. Ancient Chinese military thinking did not touch upon the issue of crisis or escalation management. During China's revolutionary years under Mao Zedong, China's security policy emphasized the importance of using tactics that create the utmost uncertainty in the enemy's mind. The intent was to understand the enemy as much as possible but to keep the enemy from obtaining a similarly accurate understanding.[26] This traditional thinking was very different from the West's emphasis on reducing the fog of war.

Chinese political and military leaders consistently expressed the view that military actions should only be taken when there is absolute certainty (or near-absolute certainty) of winning. Among the three principles for fighting enemies stressed by Mao Zedong, one was about when to employ military power: "[It] is the winning principle. We either do not fight them; or if we do choose to go into a fight, we must win. We should never fight a war for which we are not very well prepared and which we do not have full confidence of winning."[27] Because of this principle, Chinese strategists traditionally did not devote a great deal of thinking to scenarios other than complete victory or defeat.

Under the leadership of Mao Zedong and Deng Xiaoping, there was a very clear line in Chinese military doctrine and policy deliberation between the roles of nuclear weapons and conventional weapons. Nuclear weapons were regarded only as a "strategic deterrent" for deterring nuclear wars. They were not intended and not very useful, Mao Zedong and Deng Xiaoping believed, for deterring other types of wars, including large-scale conventional wars and regional conflicts.[28] They believed that mass mobilization (the people's war) was

more effective in deterring large-scale conventional invasion, and rapid-response conventional forces were more effective at deterring regional conflicts.[29]

In addition, China was not a major player in previous nuclear crises, which might have contributed to China's lack of appreciation of inadvertent escalation risks. Before the 1980s, Chinese discussions focused on how most crises stemmed from domestic struggles rather than international problems.[30] Since China obtained nuclear capability in the mid 1960s, it has had little direct involvement in nuclear crises, with a slight exception in 1969 when the Soviets were reported to have implicitly threatened a surgical strike against China's rudimentary nuclear capability.[31] In contrast, the United States and the Soviet Union underwent a number of serious nuclear crises, not least the Cuban missile crisis. These nuclear crises between the United States and the Soviet Union taught them firsthand lessons about the real dangers of inadvertent escalation, whereas China had very limited experience in comparison.

Moreover, the traditional Chinese view was that discussing the issues of crisis or escalation control in and of itself sends a signal of weakness.[32] Never making compromises with the enemy was regarded as a sacred principle and a key quality of a decisionmaker.

Gradually, the gap between U.S. and Chinese understandings about crisis stability has narrowed, as China becomes more appreciative of escalation risks. During various U.S.-China Track II dialogues, Chinese participants have become more interested in discussing escalation prevention from the conventional to nuclear level.[33] Specific escalation scenarios across the Taiwan Strait were mostly discussed during these exchanges, but as the conversation went broader and deeper,[34] other scenarios—such as on the Korean Peninsula, in the South China Sea, and in South Asia—were also discussed.[35] Chinese participants have started to appreciate the risk of inadvertent escalation if signals are miscommunicated.[36] They have begun to urge Washington and Beijing to make crisis management a priority and seek mutual understanding of each other's key operational principles, and to stress that both countries must establish bilateral crisis management mechanisms to improve communication both before and during a crisis.[37] The importance of direct communication is also increasingly emphasized.[38]

During such exchanges, Chinese participants have been increasingly open and willing to discuss more sophisticated issues related to crisis management. On several occasions, the issue of cross-domain escalation was discussed. Escalation control discussions expanded beyond nuclear-only scenarios, including additional domains such as space, air, and cyber. Chinese experts also actively argued for the two countries to establish "rules of the road" to manage potential crises.[39]

The same trend has appeared in the Chinese nuclear community's publications. They increasingly accept U.S. scholars' concepts and use their works to draw lessons for China's nuclear policy. Chinese scholars introduce and apply

concepts such as Thomas Schelling's "threat that leaves something to chance," Robert Jervis's slippery slope from conventional to nuclear war, and Glen Snyder's stability/instability paradox to Chinese scenarios.[40] Experts such as Wang Jisi and Xu Hui have proposed practical steps for China to take in order to better understand and manage crises.[41]

However, there are still important misunderstandings within the U.S. nuclear community about China's crisis management policy. U.S. analysis of the People's Liberation Army (PLA) Rocket Force's nuclear operation still relies heavily on very few publications available written by Chinese military scholars, which have generated a number of major misunderstandings. On the issue of crisis management, for example, the book *Science of Second Artillery Campaigns*, published by the PLA Rocket Force (formerly the Second Artillery Force) in 2004, discusses situations in which China might need to "lower the nuclear deterrence threshold." This was interpreted by U.S. experts as evidence that China was prepared to use nuclear threats to deter conventional wars or in scenarios of conventional conflicts.[42] But what the book really means by referring to "lowering the nuclear deterrence threshold" is raising the alert status during a crisis rather than using nuclear weapons in scenarios other than a retaliatory strike.[43] Similar misunderstandings took place over terms used by the Rocket Force such as "conventional war under nuclear deterrence" or "double deterrence."[44] In recent years, U.S. and Chinese experts managed to work out many such differences by jointly producing and promoting a common glossary on nuclear issues.[45] However, some of the misunderstandings caused by linguistic, cultural, and bureaucratic factors continue to exist and will take time to be resolved.

New military technologies can pose fresh challenges for crisis management in the future. For instance, U.S. and Chinese experts have not reached common understandings about whether the use of counterspace (such as antisatellite) weapons could cause serious escalation risks. Some Chinese experts seem to believe that China could consider using antisatellite (ASAT) weapons in the early phase of a regional conventional conflict against U.S. early-warning satellites. Besides providing early warning for U.S. strategic nuclear forces, these satellites also help enhance U.S. theater ballistic missile defense capabilities. By taking out some of these satellites, China can maintain the efficacy of its conventional tactical missiles, which play an important role in Chinese military strategies in future regional conflicts—including one over the Taiwan Strait. Nonetheless, Washington is likely to view an ASAT attack against its early-warning satellites not as a tactical move but as a major escalation.[46] Such divergent views could cause misunderstandings and inadvertent escalation.

Similarly, the United States' emerging interest in using cyber weapons to undermine an enemy or competitor's nuclear command, control, and communication (NC3) system as part of the so-called left-of-launch missile defense strategy introduces unprecedented risks of inadvertent escalation. Knowing

that the United States might have been developing covert cyber and electronic warfare capabilities to infiltrate and interfere with China's nuclear NC3 system, Chinese decisionmakers would face extra pressure to act quickly during a crisis. If such interference were detected during a crisis, it is very likely that China would not be able to figure out quickly and exactly what damage might be done to its NC3 system or what the strategic intention would be. If China feels that it has to assume the worst and act quickly before its NC3 system is completely undermined, an unnecessary nuclear escalation would be more likely to happen than before. So far, there has not been serious discussion on such matters between the two governments.

Japan's Impact on U.S.-China Strategic Stability

The troublesome Chinese-Japanese security relationship further complicates the U.S.-China nuclear dynamic. Problems in Chinese-Japanese relations derive partly from deeply buried historical antagonism, which gets evoked each time senior Japanese officials pay tribute to the Yasukuni Shrine or right-wing Japanese officials appear to deny responsibility for crimes committed during World War II. Bilateral security tensions are also fueled by territorial disputes, mostly over the Senkaku/Diaoyu Islands. Extended confrontations over the disputed islands have diminished bilateral trust and reduced public perception to historically low favorability levels. Rising nationalist sentiments add fuel to the tension. Leaders from both countries find it difficult to initiate high-level visits and exchanges. On top of that, Japan faces increasingly intensive competition between the United States and China. It has given China the impression that it is pessimistic about the prospect of repairing relations and has decided to side completely with the United States to hedge against a rising China. Beijing, therefore, is increasingly showing a cold shoulder to Tokyo. As the U.S.-China relationship continues to face constant troubles, China sees the ever-closer U.S.-Japan security alliance increasingly as a strategic threat.[47]

Nuclear Hedging and U.S. Extended Nuclear Deterrence

Besides concerns over the general trend of Japan's military growth and normalization, China shows real unease about Japan's nuclear hedging capability. Regarding material capability, Japan is the only non-nuclear-weapon state under the Nuclear Non-Proliferation Treaty that has both commercial-scale reprocessing and enrichment capability. Japan's large plutonium stockpile draws China's close attention, and many Chinese experts attribute this large plutonium stockpile to a deliberate policy choice rather than problematic planning and mismanagement by Japan's cumbersome civilian nuclear bureaucracy. Furthermore, Japan's M-V and H-II rockets have the potential to deliver a heavy nuclear payload over long distances. Japan has also demonstrated the capability to retrieve unmanned spacecraft and the upper stage of an HIIB rocket[48]—technology that could be useful in building nuclear warhead–reentry vehicles.

Many Chinese experts suspect that Japan is deliberately pursuing a strategy of nuclear hedging. Secret studies conducted by the Japanese government during the Cold War recommended against a nuclear weapon program but argued for accumulating dual-use technologies useful for obtaining a virtual military nuclear capability. Senior Japanese officials' open remarks about nuclear hedging have reinforced Chinese concerns.[49]

As a result, China acknowledges that the U.S. extended nuclear deterrence over Japan helps contain the latter's nuclear ambition and contributes to nuclear nonproliferation in the region. As North Korea's nuclear and missile capabilities advance, rising voices in Japan are calling to develop Japanese offensive long-range strike capabilities against enemy military bases. If the United States fails to reassure Japan about the reliability of its extended deterrence, the chances of Japan going nuclear might further increase.

However, despite Washington's longstanding policy of nonproliferation, there have been recent cases of U.S. scholars openly arguing for Japan to develop its own nuclear deterrent.[50] U.S. President Donald Trump's remarks on the possibility of Japan going nuclear have also made some Chinese analysts question the United States' commitment to maintaining regional stability through promoting nonproliferation. Besides Japan's own nuclear potential, Chinese experts worry that Japan might undermine U.S.-China strategic stability in several other ways.

Japan's Potential Contribution to U.S. First-Strike Capability Against China

The first concern is that Japan may work together with the United States—deliberately or not—to undermine China's strategic nuclear deterrent vis-à-vis the United States. Even though China has been gradually modernizing and slowly expanding its nuclear arsenal in recent decades, there is still debate about whether it has achieved assured nuclear second-strike capability against the United States. Some U.S. scholars believe Chinese nuclear forces are still vulnerable to a U.S. first strike.[51] Chinese scholars point out that although Chinese nuclear retaliation capability against the United States is uncertain, Beijing is working hard to minimize the remaining uncertainty.[52] China's recent moves to field more capable road-mobile intercontinental ballistic missiles and introduce sea-based nuclear weapons are clear signals that, ultimately, China wants to eliminate any uncertainty by acquiring an assured second-strike capability vis-à-vis the United States. The Chinese efforts to achieve this goal, however, can be undermined by Japan's military cooperation with the United States.

China's greatest concern about its future nuclear deterrent is the U.S. missile defense system, which has received persistent investment and achieved sustained improvement. Japan has been incorporated into the U.S. missile defense network in Asia through joint development and deployment of SM-3 interceptors on Aegis ships. It already hosts two AN/TPY-2 X-band radars and is further considering introducing land-based SM-3 systems and the Terminal High

Altitude Area Defense (THAAD) batteries. China worries that advanced SM-3 interceptors may have the potential to engage Chinese ICBMs in the future.[53]

Japan sees great political value from such missile defense cooperation with the United States, which "symbolizes the Japan-U.S. alliance."[54] China's concern is that such cooperation is at least partially targeted at itself. U.S. experts and officials acknowledge that Washington needs to develop a regional missile defense network in the Asia-Pacific to counter China's conventional missile capabilities.[55] However, such capabilities to defend against China's conventional ballistic missiles could also neutralize China's theater nuclear missiles, which would be useful for retaliating against U.S. targets in the region. As a former senior U.S. official commented, regional ballistic missile defense "enables offensive operations to begin at a time of our choosing rather than the enemy's, and raises the scale of attack that an attacker must attempt if it wants to overwhelm the defense."[56] China, therefore, worries that Japan's contribution to the U.S. regional missile defense network increases the United States' first-strike capability against China.

In addition, China is putting together a fleet of nuclear strategic ballistic missile submarines (SSBNs) and having them conduct patrols. Part of China's motivation for building this fleet seems to be the perceived capability of SSBNs and submarine-launched ballistic missiles (SLBMs) to penetrate existing U.S. missile defense systems.[57] However, U.S. regional allies, especially Japan, have been working closely with the United States to enhance anti-submarine warfare (ASW) capabilities in the Asia-Pacific, which poses a major threat to China's sea-based nuclear deterrent. Japan's participation in the U.S. ASW network is of particular concern to China. If Chinese SSBNs are to conduct patrols in the West Pacific, they will have to pass through water channels along the so-called First Island Chain and some of the most important water channels are immediately adjacent to Japan-controlled territories. Therefore, Japan is in a strategically advantageous position to help the U.S. Navy track, trail, and even disrupt Chinese SSBNs on their patrol routes. In recent years, Japan has worked with the United States to upgrade the underwater sound surveillance system that the United States first deployed during the Cold War.[58] With the most formidable ASW capability in the region, Japan participates frequently in joint ASW training, exercises with the U.S. Navy, and sends anti-submarine reconnaissance aircraft to fly over the South China Sea.[59] Given that a major portion of China's SSBN fleet is presumed to be deployed in the South China Sea, Japan's increasing ASW operations over that area constitute a significant and increasing threat to China's nuclear deterrent.[60]

Japan's Potential Interest in U.S. Nuclear Primacy

From the Chinese perspective, Japan may have an interest in undermining U.S.-China strategic stability. Some U.S. scholars hold the view that the United States needs to possess nuclear primacy (nuclear first-strike capability)

over China in order to bolster its own deterrence posture and enhance the credibility of the U.S. extended nuclear deterrence for allies.[61] The argument is that if there is mutual vulnerability between Washington and Beijing, the United States may be deterred from launching a nuclear retaliation after China strikes Japan with nuclear weapons. This view may be shared by some Japanese experts. Japan is also very concerned that a mutual vulnerability relationship between Beijing and Washington would effectively reduce the danger of conventional conflicts escalating to the nuclear level. Thus, Japan worries that a stable U.S.-China nuclear relationship would embolden China's conventional military aggression toward Japan.[62] Partially because of Japanese concern over the so-called stability-instability paradox, the administration of former president Barack Obama decided not to openly acknowledge the existence of a mutual vulnerability relationship with China.[63]

Japan is also believed to have played a role in discouraging Washington from adopting a no-first-use declaratory policy and from announcing that the "sole purpose" of its nuclear weapons is to deter nuclear attack. According to the Center for Global Security Research's Brad Roberts, the Obama administration's nuclear posture review report rejected the "sole purpose formulation" after "carefully considered the views of its allies in Northeast Asia (and elsewhere)."[64] The Obama administration also seriously considered adopting a no-first-use policy in 2016 but decided not to do so at the last minute "largely because of pushback from allies who are under the U.S. nuclear 'umbrella.'"[65] It was reported that Japanese Prime Minister Shinzo Abe personally conveyed concerns about a U.S. no-first-use policy to U.S. Admiral Harry Harris, commander of the U.S. Pacific Command.[66]

From the Chinese perspective, declaring that the "sole purpose" of nuclear weapons is to deter nuclear attacks and adopting a no-first-use policy of nuclear restraint are the most effective ways to reduce nuclear risks and promote nuclear disarmament. Therefore, China sees Japan's efforts to prevent the United States from taking such measures as undermining U.S.-China strategic stability and regional security.

Japan's concern about an unfavorable conventional military balance in East Asia has only increased in recent years, as Beijing is quickly catching up to—and may even be outpacing—Japan's conventional military capability development. China is also narrowing the gap with U.S. conventional capability in the region. This could have implications for Japan in a future military conflict over the Senkaku/Diaoyu Islands or the Taiwan Strait. Even some U.S. scholars worry that China may obtain conventional military superiority vis-à-vis Japan and the United States in some restrained regional theaters in the near future. A 2015 RAND report on the U.S.-China military balance, for instance, points out that "PLA forces will become more capable of establishing temporary local air and naval superiority at the outset of a conflict," which "might lead Chinese leaders to believe that they could deter U.S. intervention in a conflict between it and one or more of its neighbors."[67]

In anticipation of possible Chinese conventional superiority in the future, some scholars in the United States have argued for reemphasizing the role of nuclear weapons—especially the so-called tailored nuclear capabilities that can be employed more flexibly on the battlefield.[68] Some suggest that the United States may need to consider using nuclear weapons first during a conventional war with China in the future.[69] Some others predict that the United States' Asian allies, such as Japan, should consider their own nuclear options.[70] Therefore, concerns about conventional imbalance may have direct implications for nuclear stability. The propositions for maintaining or even increasing the role of nuclear weapons could undermine international efforts to promote nuclear arms control. Japan and other U.S. allies have already voted against the starting of negotiations at the United Nations on a treaty to ban nuclear weapons. Increasing concern about conventional imbalance could seriously challenge U.S.-China strategic stability and regional security in the future.

Conclusion

Although China has gradually embraced the Western definition of strategic stability, U.S.-China relations face serious related challenges. In particular, new military technologies complicate China's confidence in its second-strike capability vis-à-vis the United States. Efforts to address these challenges have led to further nuclear modernizations and contributed to an increasingly blurred line between nuclear and conventional capabilities. The generally adversarial relationship between China and Japan further complicates the U.S.-China strategic stability relationship. Although the U.S. extended nuclear deterrence helps contain Japan's aspirations for its own nuclear deterrent capability and therefore contributes to regional nonproliferation, such constraint might be eroding as a result of the Trump administration's lukewarm commitment to the alliance. More importantly, Beijing believes that Tokyo has an inherent interest in helping the United States obtain nuclear primacy over China and in undermining U.S.-China nuclear stability in order to strengthen the reliability of U.S. extended deterrence and contain China's conventional military capability. A perceived shift in the region's conventional military balance has exacerbated Japan's concerns over time and poses a growing challenge to U.S.-China strategic stability. So far, confidence-building measures on nuclear issues are limited between Washington and Beijing and between Beijing and Tokyo. Official U.S.-China nuclear dialogue may help improve mutual understanding, and Chinese-Japanese security exchanges can play a critical role in mitigating threat perceptions. Some form of trilateral discussions could also go a long way to promote positive interactions among the three countries and contribute to strategically stable relations.

Notes

1. See, for example, John D. Steinbruner, "National Security and the Concept of Strategic Stability," *Journal of Conflict Resolution* 22, no. 3 (September 1978); Elbridge A. Colby and Michael S. Gerson, *Strategic Stability: Contending Interpretations* (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2013).
2. Xinhua News Agency, "NATO Foreign Affairs Ministers Conference Emphasized Defense Issues Arguing for Capabilities That Can Deter Invasion and Resist Pressure" [in Chinese], *People's Daily*, December 9 1977.
3. Brad Roberts, "China and Ballistic Missile Defense: 1955 to 2002 and Beyond," Institute for Defense Analyses, September 2003.
4. See, for example, Wang Jin and Li Wensheng, "The Controversies Over the Two-Plus-Two: The Missile Defense and Strategic Weapons of the Untied States and Russia" [in Chinese], *Ordnance Knowledge*, no. 5 (2008); Xu Nengwu, "The Threats and Challenges to Outer Space Security Posed by the Adjustment of the U.S. Strategic Deterrent System" [in Chinese], *National Defense Science & Technology*, no. 2 (2013).
5. Sun Xiangli, "Theories and Practice in Arms Control" [in Chinese], *Teaching and Research*, no. 6 (2001).
6. Li Jingping, "A Preliminary Analysis on U.S.-China Strategic Stability: Contructing U.S.-China Strategic Stability Beyond Strategic Weapons" [in Chinese], in *13th PIIC Beijing Seminar on International Security* (Beijing: Program for Science and National Security Studies, 2012).
7. Lewis A. Dunn et al., "Building Toward a Stable and Cooperative Long-Term U.S.-China Strategic Relationship" [in Chinese], Science Applications International Corporation, the Pacific Forum CSIS, and China Arms Control and Disarmament Association, 2012.
8. Xu, "Outer Space Security."
9. Wu Ting, "Space Weaponization From the Perspective of U.S.-China Strategic Stability" [in Chinese] (master's thesis, Fudan University, 2012); Li Deshun, "The Mutual Independence in Strategic Stability" [in Chinese] (PhD dissertation, Tsinghua University, 2012); Li Bin and Nie Hongyi, "Analysis on the Strategic Stability Between China and the United States" [in Chinese], *World Economics and Politics*, no. 2 (2008): 13–19.
10. James M. Acton, "Reclaiming Strategic Stability," in *Strategic Stability: Contending Interpretations*, ed. Elbridge A. Colby and Michael S. Gerson (Carlisle, PA: Strategic Studies Institute, US Army War College Press, 2013).
11. Wu Riqiang, "Survivability of China's Sea-Based Nuclear Forces," *Science & Global Security* 19, no. 2 (July 2011); Li Bin and Wu Riqiang, "Impact of Euro-Missile Shield on Russia Security" (paper presented at the the 19th International Summer Symposium on Science and World Affairs, Oslo, Norway, July 21–30, 2008); Lora Saalman, "China and the U.S. Nuclear Posture Review," Carnegie Endowment for International Peace, February 28, 2011, http://carnegieendowment.org/2011/02/28/china-and-u.s.-nuclear-posture-review-pub-42705.
12. Li Hongbo and Zhou Yan, "Indian Missile Defense Plan and South Asia Regional Security" [in Chinese], *South Asia Studies*, no. 4 (2009); Liu Huaqiu, "International Arms Control Aces New Challenges—'Arms Control and Disarmament Handbook' Editor Interviews" [in Chinese], *Modern Military*, no. 5 (2001).

13. Xu Nengwu and Jin Saimei, "The Practicality of the Construction of a Nuclear Free World" [in Chinese], *Contemporary World*, no. 1 (2010): 64–66; Li Bin and Xiao Tiefeng, "Rethinking the Role of Nuclear Weapons" [in Chinese], *Foreign Affairs Review* 3 (2010): 3–9.
14. In many cases, Chinese experts use the term "mutual vulnerability" interchangeably with the term "mutually assured destruction" (MAD). In the English literature, MAD can refer to a more symmetric balance of capabilities, but for most Chinese analysts, a mutual vulnerability relationship between a strong nuclear state and a weak nuclear state is also a type of MAD relationship. The two terms are therefore not clearly distinguished in the Chinese literature.
15. Li Bin, "Identifying China's Nuclear Strategy" [in Chinese], *World Economics and Politics*, no. 9 (2006): 16–22.
16. "Nuclear Disarmament and Reduction of the Danger of Nuclear War: Working Paper Submitted by China" (presented at the 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, New York, May 6, 2010); "Nuclear Disarmament and Reduction of the Danger of Nuclear War: Working Paper Submitted by China" (presented at the Preparatory Committee for the 2015 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Vienna, April 27, 2012).
17. Lu Yin, "Establishing New China-US Strategic Stability: Opportunities and Challenges," Program on Strategic Stability Evaluation, 2012.
18. Li and Nie, "Analysis on the Strategic Stability."
19. State Council Information Office of the People's Republic of China, *China's National Defense in 2010* (Beijing: State Council Information Office of the People's Republic of China, 2010).
20. Bi Yiming et al., "Research on the Quantitative Model for the Nuclear Deterrence Effectiveness" [in Chinese], *Journal of Xi'an University of Engineering Science and Technology* 19, no. 2 (2005).
21. Li Bin, "China and Nuclear Transparency," in *Transparency in Nuclear Warheads and Materials: The Political and Technical Dimensions*, ed. Nicholas Zarimpas (Oxford: Oxford University Press, 2003); Riqiang Wu, "Certainty of Uncertainty: Nuclear Strategy With Chinese Characteristics," *Journal of Strategic Studies* 36, no. 4 (2013): 579–614; Avery Goldstein, *Deterrence and Security in the 21st Century: China, Britain, France, and the Enduring Legacy of the Nuclear Revolution* (Münster: LIT Verlag, 2000); Devin T Hagerty, *The Consequences of Nuclear Proliferation: Lessons From South Asia* (Cambridge, MA: MIT Press, 1998).
22. Hans M. Kristensen, Matthew McKinzie, and Theodore A. Postol, "How US Nuclear Force Modernization Is Undermining Strategic Stability: The Burst-Height Compensating Super-Fuze," *Bulletin of the Atomic Scientists*, March 1, 2017; Francis J. Gavin et al., "ISSF Policy Roundtable 1–4 (2016) on U.S. Nuclear Policy," International Security Studies Forum, December 2016.
23. Tamir Eshel, "Multi-Object Kill Vehicle (Mokv) Begins to Take Shape," Defense Update, http://defense-update.com/20151122_ekv-mokv.html.
24. Hans M. Kristensen and Robert S. Norris, "Chinese Nuclear Forces, 2016," *Bulletin of the Atomic Scientists* 72, no. 4 (2016). The variance is a result of whether the DF-31 missile, which has a reported range of 7,000+ km is counted as an ICBM.
25. Wu Riqiang, "China's Anxiety About US Missile Defence: A Solution," *Survival* 55, no. 5 (2013).
26. Mao Zedong, *Selected Military Works of Mao Zedong* [in Chinese] (Beijing: People's Liberation Army Soldiers Publishing House, 1981).
27. Wang Jisi and Xu Hui, "A Comparative Analysis of Sino-U.S. Crisis Behavior" [in Chinese], *America Studies*, no. 2 (2005).

28. Wu Qiong, "An Exploration of China's Military Deterrent Thinking in the New Era" [in Chinese], *Military History Research*, no. 2 (2002): 14–22.
29. Yuan Zhengling, "The Thoughts and Practice of Conventional Deterrence After the Founding of PRC" [in Chinese], *Military History*, no. 1 (2002): 22–26.
30. Davis B. Bobrow, Steve Chan, and John A. Kringen, *Understanding Foreign Policy Decisions: The Chinese Case* (New York: The Free Press, 1979).
31. Yu Yi, "Sino-Soviet Nuclear Crisis Caused by Zhenbao Island" [in Chinese], *Friends of Party Members and Cadres*, no. 12 (2009); Chen Hao, "Zhou Enlai Before and After the Zhen Bao Islands Clashes" [in Chinese], *Extensive Collection of the Party History*, no. 1 (2010); William Burr, "Sino-American Relations, 1969: The Sino-Soviet Border War and Steps Towards Rapprochement," *Cold War History* 1, no. 3 (2001).
32. Zhang Tuosheng, "Zhang Tuosheng Discusses the Establishment of the State Security Committee" [in Chinese], *National Culture History*, no. 24 (2013).
33. Michael Glosny and Christopher Twomey, "U.S.-China Strategic Dialogue, Phase V, 2010," Naval Postgraduate School, October 22, 2010, https://calhoun.nps.edu/bitstream/handle/10945/828/NPS-NS-10-002.pdf?sequence=1&isAllowed=y.
34. Christopher Twomey and Kali Shelor, "U.S.-China Strategic Dialogue, Phase II Conference Report," Naval Postgraduate School, April 12, 2007, https://calhoun.nps.edu/bitstream/handle/10945/825/NPS-NS-07-002.pdf?sequence=1.
35. Ibid.; Michael Glosny, Christopher Twomey, and Ryan Jacobs, "U.S.-China Strategic Dialogue, Phase VII Report," U.S. Naval Postgraduate School Center on Contemporary Conflict and Defense Threat Reduction Agency, May 2013, https://www.hsdl.org/?view&did=739908; Ralph Cossa, Brad Glosserman, and David Santoro, "Progress Continues, but Disagreements Remain: The Seventh China-US Strategic Dialogue on Strategic Nuclear Dynamics & the Inaugural China-US Dialogue on Space Security," in *Issues & Insights* 13, no. 6 (January 2013).
36. Eben Lindsey, Michael Glosny, and Christopher Twomey, "U.S.-China Strategic Dialogue, Phase VI Report," Naval Postgraduate School Center on Contemporary Conflict and Defense Threat Reduction Agency, April 12, 2007, https://calhoun.nps.edu/bitstream/handle/10945/34338/nps49-052512-17.pdf?sequence=1.
37. Cossa, Glosserman, and Santoro, "Progress Continues."
38. Christopher Twomey and Kali Shelor, "U.S.-China Strategic Dialogue, Phase III: 'The Role of National Perceptions of Security Environments in Shaping Sino-American Nuclear Affairs,'" (report on conference findings, organized by U.S. Naval Postgraduate School and Pacific Forum CSIS, November 4–6, 2007).
39. Cossa, Glosserman, and Santoro, "Progress Continues."
40. Li, "Identifying China's Nuclear Strategy"; Yi Liu, "After MAD: Deliberating China's Nuclear Strategy and Missile Defense" [in Chinese], *World Atlas*, no. 3 (2010); Li and Xiao, "Rethinking the Role of Nuclear Weapons"; Hou Rui, "Research on U.S. Strategic Nuclear Missiles and the Cold War: 1945–1968" [in Chinese] (PhD disseration, Northeast Normal University, 2007).
41. Wang and Xu, "Sino-U.S. Crisis Behavior."
42. Thomas J. Christensen, "The Meaning of the Nuclear Evolution: China's Strategic Modernization and US-China Security Relations," *Journal of Strategic Studies* 35, no. 4 (2012): 447–87.
43. Wu Riqiang, "Issues in Sino-US Nuclear Relations: Survivability, Coercion and Escalation," UK Foreign and Commonwealth Office, 2013.
44. Christensen, "Nuclear Evolution"; Wu, "Issues in Sino-US Nuclear Relations."
45. National Research Council, *English-Chinese, Chinese-English Nuclear Security Glossary* (Washington, DC: National Academies Press, 2008).

46. Barbara Opall-Rome, "U.S. Wants a Space Debris Hotline With China Patterned on the One With Russia," SpaceNews, February 13, 2012, http://spacenews.com/us-wants-space-debris-hotline-china-patterned-one-russia-0/.
47. Parts of this argument are drawn from Tong Zhao, "Strategic Stability of China-ROK-Japan Triangle," Carnegie Endowment for International Peace, April 20, 2016, http://carnegietsinghua.org/2016/04/20/strategic-stability-of-china-rok-japan-triangle-pub-64700.
48. Takase Kazuo et al., "Successful Demonstration for Upper Stage Controlled Re-Entry Experiment by H-IIB Launch Vehicle," *Mitsubishi Heavy Industries Technical Review* 48, no. 4 (2011): 11–16.
49. "Japan's Pro-Bomb Voices Rise as Nuke Power Debated," Associated Press, July 31, 2012, http://www.foxnews.com/world/2012/07/31/japan-pro-bomb-voices-grow-louder-amid-nuke-debate.html. As cited in Tong Zhao, "Strategic Stability of China-ROK-Japan Triangle."
50. James Van de Velde, "Go Ahead. Let Japan and South Korea Go Nuclear." *National Interest*, October 1, 2016, http://nationalinterest.org/feature/go-ahead-let-japan-south-korea-go-nuclear-17897; Anders Corr, "Japan: Go Nuclear Now," *Forbes*, January 31, 2017, https://www.forbes.com/sites/anderscorr/2017/01/31/japan-go-nuclear-now/#1e3f754e7745.
51. Keir A. Lieber and Daryl G. Press, "U.S. Nuclear Primacy and the Future of the Chinese Deterrent," *China Security* 3 no. 5 (2007): 66–89; "The End of MAD? The Nuclear Dimension of U.S. Primacy," *International Security* 30, no. 4 (2006): 7–44.
52. Wu, "Certainty of Uncertainty."
53. Tong Zhao, "Strategic Stability of China-ROK-Japan Triangle."
54. "Is Missile Defense Useful?" *Japan Times*, May 13, 2013, http://www.japantimes.co.jp/opinion/2013/05/13/commentary/japan-commentary/is-missile-defense-useful/#.WM4CLm997Dc.
55. Brad Roberts, "Extended Deterrence and Strategic Stability in Northeast Asia," *NIDS Visiting Scholar Paper Series* 1 (2013): 29–30.
56. Ibid.
57. Shou Xiaosong, *The Science of Military Strategy* [in Chinese] (Beijing: Military Science Press, 2013).
58. Desmond Ball and Richard Tanter, *The Tools of Owatatsumi: Japan's Ocean Surveillance and Coastal Defence Capabilities* (Canberra, Australia: Australian National University Press, 2015); Lyle Goldstein and Shannon Knight, "Wired for Sound in the 'Near Seas,'" *Proceedings* 140, no. 4 (April, 2014); Owen R. Cote Jr., "Assessing the Undersea Balance Between the U.S. and China," SSP working paper, Massachusetts Institute of Technology, February, 2011.
59. Zhang Tao, "Expert: China Should Monitor Japan's Aircraft That May Fly Over South China Sea," China Military Online, January 13, 2016.
60. Tong Zhao, "Strategic Stability of China-ROK-Japan Triangle."
61. Matthew Kroenig, "Nuclear Superiority or the Balance of Resolve? Explaining Nuclear Crisis Outcomes," *International Organization* 67 (2009); Gavin et al., "ISSF Policy Roundtable."
62. Takahashi Sugio, "Rebuilding Deterrence: Post-2015 Defense Guidelines Challenges Facing the U.S.-Japan Alliance," Project 2049 Institute, May 2015.
63. Tong Zhao, "Strategic Stability of China-ROK-Japan Triangle."
64. Roberts, "Extended Deterrence and Strategic Stability in Northeast Asia."
65. Gavin et al., "ISSF Policy Roundtable."
66. "Abe Tells U.S. of Japan's Concerns Over 'No First Use' Nuke Policy Being Mulled by Obama," *Japan Times*, http://www.japantimes.co.jp/news/2016/08/16/national/

politics-diplomacy/abe-tells-u-s-japans-concerns-obama-mulled-no-first-use-nuke-policy/#.WM4cDm997Dc.

67. Eric Heginbotham et al., *The U.S.-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power 1996-2017* (Santa Monica, CA: RAND Corporation, 2015).
68. Clark Murdock et al., *Project Atom: A Competitive Strategies Approach to Defining U.S. Nuclear Strategy and Posture for 2025–2050* (Washington, DC: Center for Strategic and International Studies, May 2015).
69. Gavin et al., "ISSF Policy Roundtable."
70. Harvey M. Sapolsky and Christine M. Leah, "Let Asia Go Nuclear," *National Interest*, April 14, 2014.

APPENDIX 3

Redefining Strategic Stability: A Japanese View

Takahashi Sugio

Introduction

Strategic stability is a key concept in nuclear deterrence. But since both words, "strategic" and "stability," include some ambiguity, this concept has been sometimes misunderstood as a situation of general stability among great powers. But it has specific meanings for experts on nuclear deterrence: crisis stability and arms race stability. Crisis stability represents a situation in which both parties have no advantage from first strike, and neither side has an incentive to start a war. Arms race stability is a situation in which each party's force structure does not incentivize the other side to expand its military forces, thereby lessening the motivation to start an arms race. These notions about strategic stability were developed during the Cold War, when the United States and the Soviet Union deployed numerous nuclear warheads. At that time, avoiding nuclear war, which could quickly extinguish many human beings, was the primary objective.

In the contemporary world, how to deal with rising China is perceived as a serious strategic agenda item and the notion of strategic stability is applied to Sino-U.S. relations.[1] Current Sino-U.S. relations, however, are different from U.S.-Soviet relations during the Cold War, and the concept of strategic stability needs to be redefined. In that process, not just U.S. expert thoughts, but also views from Japan need to be considered because Japan is a key U.S. ally in East Asia and an important piece in East Asia strategic dynamics. The purpose of this piece is to provide an overview of how Japan's strategists see strategic stability and how they think about redefining it for the contemporary world.

Understandings of Strategic Stability in the Japanese Strategic Community

The intellectual history of the Japanese study of cutting-edge nuclear deterrence theory is not short. While nuclear deterrence has been a very politically sensitive issue in Japan after the nuclear bombings of Hiroshima and Nagasaki, some realist scholars seriously follow it. In 1973, top-ranking experts Momoi Makoto and Kosaka Masataka published a translated book about nuclear deterrence titled *Strategy in a Multipolar Era: Historical Development of Nuclear Strategy*, issued in two volumes.[2] This huge work (553 pages in volume one, and 548 pages in volume two) covers many key articles that played great roles in the development of nuclear deterrence theory, such as Bernard Brodie's "The

Anatomy of Deterrence," Thomas Schelling's "The Role of Communication in Arms Control," Albert Wohlstetter's "The Delicate Balance of Terror," Glenn Snyder's "Deterrence and Defense," and some chapters from Henry Kissinger's *The Necessity for Choice*. While this is a translated work and not an original study about nuclear strategy, its publication suggests that there was a market for such strategic issues in Japan's intellectual community in the early 1970s.

And during the final phase of the Cold War, the Japan Association of International Relations, which is the biggest academic association on international relations studies in Japan, published a special issue of its journal on "Nuclear Deterrence and Arms Control at a Turning Point." The issue covered the Intermediate-Range Nuclear Forces (INF) debate, deterrence theories in the Soviet Union, the credibility of a nuclear umbrella, and nuclear arms control.[3] Following this, immediately after the end of the Cold War, that generation's three top nuclear deterrence experts, Ogawa Shinichi, Umemoto Tetsuya, and Ishikawa Shuichiro, published books exclusively focusing on nuclear deterrence.[4] As these publications show, even with Japan's nuclear taboo, studies about nuclear deterrence issues were steadily developed. At the same time, however, these are basically textbooks on nuclear issues and include very few original studies. In this sense, regarding strategic stability, the purpose of these publications was to introduce American thoughts on strategic stability to Japanese audiences.

The only exception was Japanese engagement on the INF issue. During the INF Treaty negotiations, the United States and the Soviet Union discussed an option to relocate their intermediate nuclear forces from Europe, rather than remove them from both Europe and the Far East. At that time, Japan was concerned about this option, and then Japanese prime minister Nakasone Yasuhiro sent a strong message to U.S. president Ronald Reagan that Japan could not accept it. This exception, however, is about a specific policy issue rather than broader strategic concepts such as strategic stability. In this sense, during the Cold War, the Japanese strategic community was in a "receiving mode" for U.S. strategic thoughts on nuclear issues.

One of the reasons, in addition to the nuclear taboo in Japan's society, was a significant difference in the strategic situation between Europe and Asia. In Europe, where a key theme in nuclear strategic thought was to avoid a nuclear exchange between the North Atlantic Treaty Organization and members of the Warsaw Pact, the question of how to offset conventional inferiority to the Soviet Union was a critical challenge for U.S. strategists. Given the strategic balance in Cold War Europe, nuclear forces were regarded as an indispensable "equalizer" against conventional superiority. Detailed thoughts about the escalation ladder from the conventional level through tactical and theater nuclear weapons to strategic nuclear forces were developed. The concept of strategic stability was to mitigate the incentives for first strike to avoid inadvertent war and to lessen the motivation for an arms race under a strategic showdown.

Meanwhile, in Asia, the strategic situation was completely different. Since Asia was basically a maritime environment, the Soviet Union's armored divisions had limited strategic implications, even though they were quantitatively (and possibly qualitatively against Japan) superior. In Asia, key elements determining strategic balance were naval and air power. In those capability areas, the United States enjoyed huge advantages over the Soviet Union. Therefore, the United States and Japan did not rely on nuclear weapons as an equalizer to cover conventional inferiority, unlike in Europe. The expectation for nuclear forces in Asia was to deter the Soviet Union's first use of a nuclear weapon against U.S. superior naval forces.[5] Existential deterrence was enough, and it was not necessary to develop a more sophisticated notion of an escalation ladder.

In this context, the reason why Japan had serious concerns about the relocation of the Soviet Union's SS-20 missiles to the Far East can be easily understood. From the point of view of the Soviet Union, given conventional inferiority, SS-20 deployment in the Far East would have an equalizer effect over American conventional naval superiority. But from Japan's point of view, it would undermine the foundation of Japan's strategic calculation.

Japan's Current View on U.S.-China Strategic Stability

Even after the end of the Cold War, strategic stability between the United States and Russia has continued to be a serious issue in international affairs, and multiple nuclear arms control treaties have been concluded by these two countries. At the same time, the Sino-U.S. nuclear relationship has become more relevant. This is a more serious issue for Japan's national security than U.S.-Russia relations, because the Far East in the Cold War was the second front, but East Asia could now be the first front. In addition to this geostrategic standpoint, with its significant efforts to develop conventional anti-access/area-denial (A2/AD) capability, China is challenging U.S. superiority with air and maritime forces in the Western Pacific.

Under such strategic conditions, Japan's strategist community pays more attention to strategic stability. The main focus for them is crisis stability, or, more precisely, mutual vulnerability. The author, for example, raises the issue of the stability-instability paradox, focusing on mutual vulnerability in strategic stability and pointing out that U.S. acceptance of a condition of mutual vulnerability between the two countries could cause deterioration in the regional security environment through that paradox.[6] The stability-instability paradox implies a situation in which mutual deterrence at the strategic level leads to a challenger's aggressive behavior at the regional level, because that challenger perceives that the counterpart would refrain from responding to avoid escalation. Japan's strategist community demonstrates serious concern that this paradox could be realized in this way: in the event that the United States explicitly accepts mutual vulnerability with China, China may make even bolder moves, with the attendant risk of escalation, from the gray zone to

conventional conflict. These moves might be based on China's overconfidence in its deterrence against a U.S. response and its assessment that the United States would want to avoid a severe showdown at the strategic nuclear level because of mutual vulnerability. In this way, crisis stability based on mutual vulnerability at the strategic level may invite instability at the theater level.

Ishikawa Taku, another nuclear strategist in Japan, points out the asymmetry in vulnerability within this region.[7] While China and North Korea have acquired invulnerable theater strike capabilities with road-mobile missiles, Japan, South Korea, and Taiwan lack such strike capability. In this sense, China and North Korea enjoy one-sided invulnerability. Ishikawa argues that this asymmetrical invulnerability is offset by U.S. theater and strategic strike capabilities, which hold China and North Korea's full range of targets at risk. With its commitment to extended deterrence, the United States guarantees regional mutual vulnerability even though regional allies and friends lack strike capability.

This implies that regional allies and friends might be highly sensitive to the fear of de-coupling, because their one-sided vulnerability can only be mitigated and resolved by the assistance of the United States. Even worse, in the face of China's rapid development of theater-level A2/AD capabilities, the United States' in-theater strike force may be easily neutralized once actual kinetic conflict breaks out. Again, this observation reaffirms the seriousness of Japanese concern about the stability-instability paradox if the United States admits mutual vulnerability at the strategic level.

As these two analyses reveal, Japan's focus on strategic stability in the twenty-first century can be characterized as a regional emphasis. The Japanese treat theater-level strategic stability and strategic-nuclear-level strategic stability as if they are two separate layers. They do not see how strategic stability at the strategic nuclear level can cover all regional security potentials that lead to instability. Ishikawa treats theater-level strategic stability as separate from the strategic nuclear level, and the author has applied negative implications of strategic stability at the strategic level to a situation at the theater level. This demonstrates the necessity of integrating analysis between the strategic and theater levels to redefine the concept of strategic stability.

In addition, Japan's strategists cover arms race stability. They especially point out that the current lack of transparency concerning China's nuclear arsenal threatens the stability of the arms race.[8] With a lack of credible sources of nuclear doctrine and force structure, incentives for nuclear expansion on the other side would not decrease.

In short, Japan's view on strategic stability between the United States and China is skeptical in terms of whether it brings stability to the regional strategic situation. Rather, they are concerned that it may undermine regional stability.

Challenges to Redefining Strategic Stability in the Regional Context

Strategic stability is a concept developed in the Cold War between two nuclear superpowers fiercely competing with each other, in an era when the extinction

of humankind in an all-out nuclear war was a realistic worst-case scenario. Faced with the differences between the bipolar Cold War world order and the current multipolar one, as well as between the U.S.-Soviet ideology-based rivalry and the potential U.S.-China strategic competition, the traditional concept of strategic stability will have to undergo some change if it is to remain relevant. To redefine or reformulate the concept of strategic stability requires dealing with three challenges.

Defining Mutual Vulnerability

This is the first challenge. Mutual vulnerability is a key concept for crisis stability because no party will have first strike incentive if all parties are vulnerable to the others' second strike capability. To hold the other parties at risk, all parties must have invulnerable strike capabilities against some others' potential first strike. If country A's strategic strike capability is vulnerable to first strike, country B would have an incentive to launch a first strike to disarm country A. However, if country A's strategic strike capability is invulnerable to country B's first strike and country A can surely retaliate, there is no first strike advantage for country B, and vice versa. This situation is a classical definition of crisis stability based on mutual vulnerability.

This argument, however, fails to address the important question of how much second strike capability is enough for mutual vulnerability. This is actually an open question, especially since the Cold War. During the Cold War, there were no doubts between the United States and the Soviet Union because of the clear concept of mutual assured destruction (MAD) involving the requirement for second strike capability. "Assured destruction" capability was considered to constitute vulnerability. Of course, assured destruction capability lacks quantitative rigor. It is intuitively clear, though, that it means possessing more than hundreds of warheads. Compared to the Americans' and Soviets' literally assured destruction capabilities, China's current arsenal of strategic nuclear force is considerably modest, estimated to be twenty to forty warheads. This is less than 1 percent of the level agreed (6,000 warheads) between the United States and the Soviet Union in the Strategic Arms Reduction Treaty. If the Soviet Union only had forty nuclear-tipped intercontinental ballistic missiles (ICBMs) during the Cold War, the United States would have perceived it as a greatly favorable strategic balance, with a one-sided assured destruction capability, and would have accepted that situation without hesitation. Based on this analogy, China's current level of strategic nuclear force would not be considered to produce a mutually vulnerable situation.

In addition, if the United States accepts that tens of nuclear-tipped ICBMs would be enough to produce mutual vulnerability, two serious issues arise. The first is a question about alliance management. As described above, in the Cold War, mutual vulnerability was closely linked with the notion of mutual assured destruction and, related, assured destruction capability. If the United States treats tens of weapons—which would have been considered a favorable

strategic situation during the Cold War—as a strategic nuclear arsenal, Asian allies would interpret that they are less valuable than European allies were in the Cold War.

The second issue is how to mitigate the negative implications for nonproliferation. If a proliferator perceives that 1,500 strategic nuclear warheads, about the same level as in the New Strategic Arms Reduction Treaty (START), are necessary for the United States to recognize mutual vulnerability with the other country, that proliferator would give up its development of such a strategic nuclear arsenal. If 200 are necessary, still that proliferator would be dissuaded. If twenty is enough, however, that can be achieved by some countries, especially North Korea and Iran. If the United States sets the bar of mutual vulnerability between twenty and forty warheads, it would give an achievable numerical target to countries that consider the United States a potential adversary. In this sense, recognizing mutual vulnerability with China under the current quantitative balance would incentivize regional challengers against the United States and would have negative implications for nonproliferation.

Theater Level Versus Strategic Level

Interactions between theater-level and strategic-level strategic stability represent the second challenge. As discussed, there are asymmetrical vulnerabilities in East Asia. With a rapid modernization of military force, especially concentrated efforts to develop A2/AD capabilities, China has acquired significant prompt and precise strike capabilities through ballistic and cruise missiles. By contrast, other countries in the region lack such capabilities for counterstrike. In addition, U.S. allies and friends in this region do not enjoy strategic depth with regards to opposing China. In this sense, U.S. air and maritime strike capabilities are essentially required to offset such an asymmetrical vulnerability.

At the same time, however, the main objective for China to develop A2/AD capability is to hold U.S. intervention forces at risk to restrain U.S. decisionmaking, or to physically block the U.S. reinforcements in this region. If China's advanced A2/AD capabilities succeed in neutralizing U.S. ground-based tactical aircraft, sea-based tactical strike capabilities, and aircraft carriers, the United States would lose a significant part of its strike forces, and these forces would no longer offset strategic disadvantage in the theater. In this sense, China has first strike advantage in this region that the United States does not have, at least at theater level.

Under this situation at the theater level, strategic stability at the strategic level alone may bring significant harm for regional allies. Rather, it simply works to de-couple alliances and enhance the risk of the stability-instability paradox. Therefore, if one wants to redefine strategic stability in East Asia, it is necessary to think about how to guarantee strategic stability or, more precisely, mutual vulnerability at the theater level. Logically, if U.S. regional allies acquire prompt regional strike capabilities, that kind of situation can be realized. Or, setting

aside the cost issue, if these countries deploy robust missile defense systems, the current one-sided vulnerability would be resolved and a mutual invulnerability situation would arise, resulting in a great improvement to regional level strategic stability. In short, the reformulation of strategic stability must be promoted in a way that integrates the theater level with the strategic level.

Arms Race Stability

The third challenge is about arms race stability. In addition to the transparency issue, Sino-U.S. strategic stability considerations would face more structural problems on arms race stability from Russia. During the Cold War, the participants in the nuclear arms race were realistically limited to just two players, the United States and the Soviet Union. Therefore, the game of interaction was very simple. If both parties had 1,000 warheads, numerical equality was achieved. Needless to say, asymmetrical conventional balance, different geographical locations with regards to Europe (a main front in the Cold War), and different nuclear force structures and doctrines made the problem complex, but the number of players for nuclear arms control and actors for strategic stability was limited to two.

Though the Sino-U.S. relationship is now considered to be the most important great power relationship, in terms of nuclear arms control Russia is still another key player for the United States, as the two countries agreed to 1,550 deployed warheads when signing New START. Therefore, Russia cannot be ignored.

After New START was concluded, some Japanese scholars believed that further reduction of nuclear warheads would require China's participation. Creating a nuclear arms control regime with three players is not as simple as adding one country to existing arms control negotiations. In the case where countries A, B, and C are negotiating, they would face a serious conundrum in determining how many warheads would be appropriate. Each country needs to worry about the other two ganging up. Therefore, if the three countries deploy almost the same size of strategic nuclear arsenals, all three countries have incentives for arms expansion, rather than keeping the status quo or engaging in arms reduction. In short, this situation is completely deficient in arms race stability for structural reasons. This deficiency simply comes from the number of players and is highly difficult to resolve. If China continues its arms build-up and if it increases the size of its nuclear arsenal, or if the United States and Russia continue nuclear arms reduction, this difficult situation may be brought about. In thinking about strategic stability between the United States and China, this problem cannot be avoided.

Conclusion

Japan's strategic community in the twenty-first century pays significant attention to the strategic stability issue by introducing the regional factor. Based on those thoughts, various challenges can be raised in addressing the reformulation

of strategic stability. One should not forget that strategic stability is a highly technical debate about reducing first strike and arms race incentives by tailoring force structure. But designing and developing force structure is a part of statecraft. In the Cold War, the Anti-Ballistic Missile (ABM) treaty was a great symbol of the era's strategic stability debate.

In 2001, after serious debate about missile defense, then U.S. president George W. Bush decided to withdraw from the ABM treaty and put forward the New Framework by declaring that Russia is no longer an enemy. In this post-MAD era, the role of technical written agreements regarding force structure appeared to be limited.[9] Thus, political deliberation, including engagement with China, should coexist with the increase of deterrence through alliance strengthening, gray-zone crisis control, capacity building for regional friends, and a full range of efforts for crisis management. Debate about strategic stability is important, but one should not forget this is a part of—and in some ways complementary to—such broader deterrence efforts.

Notes

1. M. Taylor Fravel and Evan S. Medeiros, "China's Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure," *International Security* 35, no. 2 (Fall 2000): 48–87; Fiona Cunningham and M. Taylor Fravel, "Assuring Assured Retaliation: China's Nuclear Posture and U.S.-China Strategic Stability," *International Security* 40, no. 2 (Fall 2015): 7–50.
2. Momoi Makoto and Kosaka Masataka eds., *Takyokuka Jidai no Senryaku: Kaku Riron no Shiteki Tenkai* [Strategy in a Multipolar Era: Historical Development of Nuclear Strategy] (Tokyo: Japan Institute for International Affairs, 1973).
3. The Japan Association of International Relations, *Kokusai Kankei* [International Relations] 90 (March 1989).
4. Ogawa Shin'ichi, *Kaku: Gunbikanri Gunshuku no Yukue* [Nuclear Weapon: Arms Control and Disarmament] (Tokyo: Ashi Shobo, 1996); Umemoto Tetsuya, *Kaku Heiki to Kokusai Seiji* [Nuclear Weapon and International Politics] (Tokyo: Japan Institute for International Affairs, 1996); Iwata Shuichiro, *Kaku Senryaku to Gunbi Kanri: Nihon no Hikaku Seisaku no Kadai* [Nuclear Strategy and Arms Control: Agenda for Japan's No Nuclear Policy] (Tokyo: Japan Institute for International Affairs, 1996).
5. Ogawa Shin'ichi, "'Kaku no Kasa' no Rironteki Kento [Theoretical Analysis on 'Nuclear Umbrella']," *Kokusai Seiji* [International Relations] 90 (March 1989): 91–102.
6. Takahashi Sugio, "Kaku Heiki wo Meguru Shomondai to Nihon No Anzen Hosho: NPR-Shin START Taisei, 'Kakuheiki no Nai Sekai,' and Kakudai Yokushi" [Issues of Nuclear Weapon and Japan's Security: NPR-New START Regime, 'Nuclear Free World,' and Extended Deterrence], *Kaigai* Jijo 58, nos. 7–8 (Summer 2010): 30–51.
7. Ishikawa Taku, "Hokutou Ajia ni Okeru 'Senryakuteki Anteisei' to Nichibei no Yokushi Taisei" ['Strategic Stability' in Northeast Asia and Deterrence Posture of the U.S. and Japan], *Kaigai Jijo* 61, no.3 (May 2013): 36–48.
8. Takahashi Sugio, "Nichibei Doumei ni Okeru Yokushi Taisei" [Deterrence Posture in the U.S.-Japan Alliance], *Kaigai Jijo* 61, no. 3 (May 2013): 85.
9. Takahashi Sugio, "Beikoku no Misairu Bouei Kousou to Posuto MAD no Kokusai Anzenhosho [U.S. Missile Defense and International Security in Post-MAD Era]," *Kokusai Anzen Hosho* 29, no.4 (March 2002): 1–18.

Carnegie Endowment for International Peace

The **Carnegie Endowment for International Peace** is a unique global network of policy research centers in Russia, China, Europe, the Middle East, India, and the United States. Our mission, dating back more than a century, is to advance the cause of peace through analysis and development of fresh policy ideas, and direct engagement and collaboration with decisionmakers in government, business, and civil society. Working together, our centers bring the inestimable benefit of multiple national viewpoints to bilateral, regional, and global issues.

The **Carnegie Nuclear Policy Program** works to strengthen international security by diagnosing acute nuclear risks, informing debates on solutions, and engaging international actors to effect change. Its multinational team, which provides unmatched on-the-ground knowledge and has access to the highest levels of government in key states, is uniquely able to both develop innovative policy approaches and influence decisionmakers on deterrence, disarmament, nonproliferation, nuclear security, and nuclear energy issues.

BEIJING BEIRUT BRUSSELS MOSCOW NEW DELHI WASHINGTON

THE GLOBAL THINK TANK

CARNEGIE
ENDOWMENT FOR
INTERNATIONAL PEACE

CarnegieEndowment.org