Engaging China to Reduce Nuclear Risks

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A s the relationship between the United States and China becomes ever more central—and increasingly fraught—there is an urgent need for the two countries to better manage the strategic relationship and avoid blunders or miscalculations that could have potentially catastrophic implications for both countries and for the world at large. The mutual recriminations and attempts to assign blame for the COVID-19 pandemic and related economic downturn, combined with simmering commercial and geopolitical tensions, have produced an even more antagonistic relationship between the two

countries, increasing the risk that bilateral tensions could result in a dangerous and unnecessary new Cold War.

The future of the U.S.-China relationship will necessarily require a balance between competition and cooperation—and as tensions rise, it will become ever more important to strengthen the latter where necessary to reduce nuclear risks. However, unlike the U.S.-Russia relationship where there is a long history of engagement on managing nuclear risks and engaging in arms control, the United States and China have almost no tradition of bilateral dialogue or negotiation on strategic issues.

Background

Over the course of multiple presidential administrations, the United States has sought to engage China on nuclear weapons and strategic security issues, mostly without success. The Trump administration's efforts focused on drawing China into a trilateral U.S.-Russia-China nuclear arms control process, an approach Beijing has rejected repeatedly, citing a major disparity in the size and composition of China's nuclear arsenal compared to the United States and Russia. For example, in July 2020, Foreign Ministry spokesperson Zhao Lijian stated, "China's objection to the so-called trilateral arms control negotiations is very clear, and the U.S. knows it very well."¹

For reasons examined more fully later, an approach that prioritizes near-term trilateral arms control is unlikely to succeed. Instead, this paper offers an alternative strategy for engaging China that starts with a recognition that there is no shortcut from the historical absence of even a baseline level of dialogue to full-fledged arms control agreements. Given China's rising military power and considerable military investment—in its nuclear forces and other strategic capabilities, including conventional and dual-use missiles and hypersonic systems, cyber capabilities, and anti-satellite and other space capabilities—efforts to broaden and deepen bilateral engagement with China are essential. The initial focus of U.S.-China engagement to reduce the risk of nuclear conflict between the two countries should be to develop a foundation of dialogue and mutual

The future of the U.S.-China relationship will necessarily require a balance between competition and cooperation—and as tensions rise, it will become ever more important to strengthen the latter where necessary to reduce nuclear risks. understanding, leading to transparency and confidence-building measures, and ultimately, as a longer-term goal, arms limitations and/or reductions.

Objectives for U.S.-China Strategic Engagement

Managing the strategic relationship between the United States and China, including building and maintaining strategic stability, avoiding crises that could escalate to the use of nuclear weapons, and managing crises that do emerge to ensure they do not escalate to nuclear use, is crucial. Just as it is imperative that the United States and Russia remain engaged on strategic issues, it is critical that the United States and China find ways to reduce the risk of use of nuclear weapons, notwithstanding broader bilateral tensions. The world narrowly survived the U.S.-Soviet nuclear brinksmanship of the Cold War; there is no guarantee it can survive another trip down that path between the United States and China.

With that in mind, engagement on strategic issues between the United States and China should be oriented around three key objectives:

- 1. Reducing the risk of use of nuclear weapons as a result of blunder or miscalculation. It is hard to imagine either the United States or China launching a "blue sky" nuclear attack. The real risk is of miscalculation or miscommunication—particularly in the context of a regional crisis—leading to nuclear use.
- 2. Constraining the potential for a destabilizing arms race between the United States and China. As both sides pursue nuclear modernization programs and develop capabilities—offensive and defensive—to address perceived security concerns, the risk of an arms race based on worst-case assumptions and planning is high and rising. Moreover, any arms competition between the United States and China would have broader—and dangerous—implications for the nuclear dynamic between the United States and Russia, as well as between Russia and China.
- **3.** Establishing a foundation of dialogue and engagement on strategic issues, which could facilitate the development of transparency and confidence-building measures in the near term and, eventually, potential arms control agreements. Such dialogue and engagement would recognize the links between U.S.-China strategic relations and other regional issues, including U.S. extended deterrence commitments to Japan and South Korea, and the challenges posed by North Korea's nuclear and ballistic missile programs.

The U.S.-China Strategic Environment

Over the past decade and across administrations of both political parties, the U.S. government increasingly has viewed China as a great power competitor and potential adversary, often in the same vein as Russia. In making its case for trilateral arms control, the Trump administration rightly noted China's growing economic and military power, Beijing's considerable investment in modernizing its nuclear forces and increasing the number, types, and survivability of delivery systems, and China's growing regional and global influence. However, there are a number of reasons that bringing Beijing into traditional, limits-based nuclear arms control is likely to prove infeasible in the near term.

First and foremost, China's nuclear arsenal is dwarfed by the U.S. and Russian stockpiles, notwithstanding the considerable reductions by Washington and Moscow over several decades. While the precise size of China's arsenal is unknown, estimates generally center around 350 warheads, according to the Federation of American Scientists (FAS)—considerably fewer than even just the deployed stockpiles of the United States and Russia. At any one time, the United States deploys at least many hundreds of nuclear warheads that can potentially reach China, with low thousands in reserve. By contrast, FAS estimates that China has approximately 150 nuclear missiles that can potentially reach the United States (FAS estimates these 150 warheads could carry approximately 190 total nuclear warheads), and that—of those—about 90 missiles (carrying approximately 130 nuclear warheads) could reach the continental United States.²

Given this disparity, any limits in a trilateral agreement modeled on existing arms control frameworks would either have to be (a) set so high as to be effectively meaningless for China (or, perversely, even incentivize Beijing to *build up* its arsenal to the limit); (b) set so low as to require massive reductions in the U.S. and Russian stockpiles, which Washington and Moscow are unlikely to agree to; or (c) unequal (i.e., keeping China's stockpile where it is while allowing Russia and the United States to retain much larger stockpiles), which China would have little or no incentive to support. Perhaps primarily owing to this disparity, in addition to other factors, China has repeatedly made clear that it has no interest or intention at this stage in joining bilateral U.S.-Russia arms control efforts.

There are other impediments to negotiating arms control agreements with China in the near term. While the United States and Russia have built up years of experience with dialogue on nuclear issues, China has been—and remains—hesitant to engage in the kind of discussions and transparency that could lay a similar foundation in the U.S.-China—or U.S.-China-Russia trilateral—relationship. China has no experience with the on-the-ground inspection and intrusive verification regimes that have been an essential feature of most U.S.-Russia arms control agreements. China has traditionally been deeply skeptical of efforts to increase transparency on its nuclear capabilities, likely owing to its significantly smaller arsenal and its official "no first use" policy, which make Beijing especially wary of sharing information that could make China more vulnerable to a disarming first strike in the event of crisis or conflict.

While it may be infeasible to incentivize China to join a New START-like framework in the near term, the status quo cannot remain indefinitely. The modernization and expansion of China's nuclear arsenal—and the lack of visibility into Beijing's plans in this regard—will pose long-term risks to strategic stability. Indeed, it is important to engage China *now* on nuclear issues with the goal of reducing the risk of use of nuclear weapons at any point in the future. The question is how best to go about that in a way that has some prospect of getting Chinese buy-in and can reduce the considerable and increasing lack of trust in the strategic relationship. Understanding existing disputes and concerns is the first step toward crafting potential solutions.

Major Security Concerns

Beijing's modernization and expansion of its nuclear capabilities along with Washington's development of new nuclear systems and growing missile defense capabilities have further complicated matters. The Trump administration argued that China's nuclear modernization represents a marked shift in its historic "minimum deterrent" approach, reflecting its growing global ambitions. The Trump administration further assessed that China likely would "at least" double the size of its nuclear arsenal over the next decade.³ Evidence of China's potential doubling of its arsenal in the coming years has not been publicly presented, and some analysts outside of government are skeptical about this claim. Indeed, official U.S. predictions about the future size of China's nuclear arsenal have consistently proven to be overstated.⁴ Nevertheless, while it is unknown whether China's nuclear warhead stockpile will increase as dramatically as some U.S. officials have claimed, China is clearly expanding the number and types of nuclear and/or dual-capable delivery systems. There is evidence that China is growing its capabilities by developing a multiple-warhead

(MIRVed) road-mobile ICBM, expanding its ballistic missile submarine (SSBN) fleet, and developing a new nuclear bomber.

Another U.S. concern is China's growing intermediate-range missile capabilities. Then-Secretary of State Mike Pompeo specifically cited China's increasing capabilities in this regard as one justification for U.S. withdrawal from the Intermediate-Range Nuclear Forces (INF) Treaty in 2019 (China was never a party to the treaty).

After leaving the treaty following Russia's violation, the United States is now actively researching and developing these same capabilities. The first test of such a system in decades took place August 18, 2019, just two weeks after the U.S. withdrawal from the INF Treaty. Thus far, there is no indication the United States is considering deploying nuclear-armed ground-launched INF-range missile systems. However, some U.S. analysts believe that deploying ground-launched conventional—or potentially dual-capable—INF-range missile systems to the Asia-Pacific region would improve U.S. deterrence capabilities. Predictably, Beijing has reacted to this idea with alarm. Fu Cong, the director general of the Department of Arms Control in China's Foreign Ministry, told reporters in 2019, "If the U.S. deploys missiles in this part of the world, at the doorstep of China, China will be forced to take countermeasures."⁵

While the United States is not increasing the number of warheads in its nuclear arsenal, Chinese leaders focus on other U.S. military activities. For Beijing, the continued U.S. build-up of its missile defense capabilities is perceived as potentially threatening to China's strategic deterrent. Since the United States withdrew from the Anti-Ballistic Missile (ABM) Treaty in 2002, Washington has consistently stressed the importance of both theater and strategic missile defense programs. The 2019 U.S. Missile Defense Review (MDR) reemphasized long-standing policy that U.S. strategic missile defense systems are designed to address rogue state capabilities, not the Russian and Chinese ICBM threat to the U.S. homeland.⁶ Yet at the same time, the MDR repeatedly cited Russian and Chinese missile advancements as serious threats and stressed the importance of regional missile defense "against all potential adversaries."⁷

Beijing believes that even a limited U.S. strategic missile defense system could pose a potential threat to its strategic deterrent, as it could leave China vulnerable to a U.S. first strike aimed at eliminating a large portion of China's nuclear deterrent, with U.S. missile defenses neutralizing any Chinese weapons that survive the initial attack. As Tong Zhao, a senior fellow at the Carnegie–Tsinghua Center for Global Policy, has explained, "From China's perspective, the most direct threat comes from U.S. strategic missile defense

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systems, particularly the Ground-Based Midcourse Defense (GMD) system that, Beijing worries, could intercept Chinese intercontinental ballistic missiles (ICBMs) using U.S. interceptors based in Alaska and California.⁷⁸

The November 16, 2020, U.S. test—reportedly successful—of its SM-3 Block IIA ship-based missile defense system against an ICBM-class target may exacerbate Beijing's concerns. China—like Russia—has long been suspicious of U.S. claims that the interceptor, originally intended for shorter-range targets, would pose no threat to China's strategic capabilities, and Beijing will likely see the test as confirmation of its suspicions and as further evidence of the need to modernize Chinese forces to ensure they can penetrate U.S. defensive capabilities. Notably, U.S. Missile Defense Agency's FY2021 budget submission indicates that procurement of the SM-3 Block IIA is expected to increase significantly beginning in FY2024.⁹

Further compounding Beijing's concerns about missile defense is uncertainty about whether the United States, in fact, seeks strategic stability and/or accepts mutual vulnerability with China. The 2010 Ballistic Missile Defense Review stated that "maintaining strategic stability in the U.S.-China relationship is as important to this Administration as maintaining strategic stability with other major powers,"¹⁰ a statement that was reiterated in the 2010 Nuclear Posture Review (NPR).¹¹ Such language is notably absent from the 2018 NPR and 2019 MDR, and, as has been discussed elsewhere,¹² Japanese officials and experts (and potentially other U.S. allies in the region) have expressed concern that a U.S. embrace of "strategic stability" and/or acceptance of "mutual vulnerability" with China could be interpreted by China—correctly or incorrectly—as an indication that the United States might be unwilling to use nuclear weapons in defense of its allies in the event of a regional conflict.

Beijing also has cited Washington's push for new nuclear capabilities as a major concern. The 2018 NPR announced the development of a modified, low-yield submarine-launched ballistic missile (SLBM) warhead and a study to determine the efficacy and merits of developing and deploying a new nuclear-armed sealaunched cruise missile (SLCM). The latter is likely of considerable concern to China, as it would restore a nuclear capability particularly relevant to the Asia-Pacific region that the United States has not deployed since the early 1990s when President George H.W. Bush removed from deployment all sea-based nuclear weapons except those on SSBNs.

Declaratory Policy

Beijing and Washington each are concerned about the other's declaratory policy. Since 1964, China has routinely reiterated that the goal of its nuclear deterrent is purely defensive and has sought to demonstrate this by maintaining a "no first use" policy and a so-called "minimum deterrent," while also keeping its warheads in storage (e.g., not "deployed" by the standards of previous and existing U.S.-Russia arms control treaties, and not on so-called "high-alert").

A 2019 white paper released by China's State Council Information Office reiterated China's declared view of the purpose of its nuclear stockpile:¹³

"China is always committed to a nuclear policy of no first use of nuclear weapons at any time and under any circumstances, and not using or threatening to use nuclear weapons against non-nuclear-weapon states or nuclear-weapon-free zones unconditionally [...] China does not engage in any nuclear arms race with any other country and keeps its nuclear capabilities at the minimum level required for national security. China pursues a nuclear strategy of selfdefense, the goal of which is to maintain national strategic security by deterring other countries from using or threatening to use nuclear weapons against China."

However, Trump administration officials routinely argued that China's stated "no first use" policy is not credible given the expansion of its nuclear capabilities. Other experts also have questioned whether China's "no first use" policy is as firm as it once was, and whether China's new ICBM capabilities may push far beyond a "minimum deterrent" posture. The new capabilities also could push Beijing to a "launch-on-warning posture" with some warheads always deployed on their designated missile and the system reliant on early warning radars (similar to the United States and Russia), which would be a significant expansion of its "minimum deterrent" posture. According to Tong Zhao, there is interest within some corners of the Chinese military to make such a change.¹⁴ Even if Chinese officials remain committed to "no first use" in principle, an increased reliance on early warning systems and silo-based ICBMs could introduce greater pressure to launch in response to warning of an incoming attack—with the attendant risk of a launch in response to a false alarm.¹⁵

For Beijing, U.S. declaratory policy offers no reassurance. The United States has never declared a "no first use" policy and has always left its options at least partially ambiguous. Compared to the 2010 NPR, the 2018 version expanded the scenarios where the United States would consider the employment of nuclear weapons. Various Chinese officials, newspaper articles, and experts criticized the NPR for this language and the document's harsh tone toward China in general. For example, Ren Guoqiang, a spokesman for China's National Defense Ministry, was quoted responding to the NPR, "We hope the U.S. side will discard its 'coldwar mentality."¹⁶

Hypersonic Weapons

As the United States and China both develop hypersonic glide vehicles, there is increasing mistrust on both sides about the intention of the other's programs. China revealed its medium-range DF-17 hypersonic glide vehicle to the world during a major military parade on October 1, 2019, and press reports indicate China had deployed the missile as of late 2020. Official Chinese sources have described the DF-17 as a conventional system, while unofficial sources have suggested it may be dual-capable,¹⁷ and the commander of U.S. Strategic Command described it as a "strategic nuclear system."¹⁸ While China—like Russia—likely views hypersonic capabilities as insurance against future development of U.S. missile defenses that Beijing fears could undermine China's nuclear deterrent, the United States fears that these capabilities could strengthen China's anti-access/area denial efforts and diminish Washington's ability to deter and defend against Chinese activities in the Western Pacific.

The United States is also researching and developing hypersonic systems, but unlike Russia and China, Washington is not developing a hypersonic system designed for a nuclear warhead. Nonetheless, China is concerned that even conventionally armed hypersonic missiles could be used by the United States against nuclear weapon targets, command-and-control centers, and other relevant facilities within China. In sum, even a conventional hypersonic weapon could pose a strategic threat.

There is an increasing risk that the United States and China, along with Russia, will enter further into a dangerous and destabilizing hypersonic weapon arms race. As these new systems develop, there will be

inevitable and likely necessary calls to constrain them through arms control or other measures. Hypersonic weapons are and will undoubtedly be a factor for U.S.-China strategic stability for decades to come.

Near-Term Engagement: Opportunities and Challenges

The decades-long history of U.S.-Russia engagement on nuclear weapons issues offers numerous lessons for expanded engagement with China, including this most basic one: serious engagement is a superior option to any alternative. Throughout even the toughest moments of the Cold War, leaders and policymakers in

Washington and Moscow engaged in robust—and at times, heated—discussions with counterparts. The first major arms control agreements—SALT I and the ABM Treaty—were painstakingly negotiated as the Vietnam War continued to rage, and the INF Treaty was negotiated and brought into force against the backdrop of the Soviet occupation of Afghanistan. Despite numerous disagreements, expanding arsenals and doctrines, heated words, and repeated near-misses, sustained bilateral dialogue was seen by both parties as a necessity.

The same viewpoint should be applied to strategic stability discussions between the United States and China. Without a meaningful strategic stability dialogue, Washington and Beijing will only continue to increase mistrust and suspicion, potentially creating a worsening environment that increases the chances of a catastrophic military exchange. Beijing's modernizing and expanding nuclear capabilities and Washington's new nuclear and expanded missile defense capabilities are more reasons to begin discussions immediately.

Considering the disparity in the size and composition of their respective nuclear arsenals, Washington should make clear that the invitation to dialogue is not intended to pressure Beijing to join a trilateral arms control arrangement with Russia. Instead, the near-term focus of U.S.-China strategic talks should be to establish a foundation of dialogue and explore transparency, crisis management, and confidence-building measures that could increase strategic stability and lower the risk of catastrophic conflict and/or an arms race.

Of course, even simple dialogue between Washington and Beijing presents many challenges. Because China has little experience with joint confidence-building and transparency measures on nuclear weapons, just beginning the conversation will be difficult. U.S. policymakers should think creatively about how to incorporate issues of concern to Beijing, as well as how to use other channels to encourage Chinese engagement. This could include enlisting Russian interlocutors—who The most important near-term step the United States and China can take to improve stability, reduce risks, and avoid crises is to initiate a regular, allweather, interagency dialogue on strategic issues, including capabilities, policies, and postures of concern to either side.

can speak firsthand to the value of dialogue—to persuade Chinese officials to engage, and/or expanding on existing work in the P5 format (this idea is explored in greater detail in a separate paper on multilateral engagement). U.S. officials also should consider how best to use existing or new Track 1.5 or Track 2 dialogues to build a foundation for Track 1 discussions without substituting for them.

On the U.S. side, this process also will require careful and ongoing consultation with U.S. allies and partners in the region, particularly those that rely on U.S. extended nuclear deterrence guarantees, especially as engagement with China advances to include more sensitive issues and potential transparency and/or confidence-building steps that could have implications for allies' security.

Specific Topics for Dialogue

The most important near-term step the United States and China can take to improve stability, reduce risks, and avoid crises is to initiate a regular, all-weather, interagency dialogue on strategic issues, including capabilities, policies, and postures of concern to either side. The current dynamic is being shaped by worst-case assumptions, which lead each side to policy and posture decisions that further fuel the other's concerns. The first step to break free from this dynamic is to build a foundation of engagement that can enhance mutual understanding of each other's perspectives and lay the groundwork for more substantive steps.¹⁹

- The United States and China should establish a regular bilateral dialogue on nuclear doctrine and policy, as well as other technologies and capabilities that could have a strategic impact. The most basic goal of this effort should be to establish an institutionalized structure for U.S. and Chinese officials—including military officials—to have such discussions on a continuing basis. This dialogue should include all issues of strategic concern to either side, including nuclear capabilities, the weaponization of outer space, anti-satellite capabilities, conventional missiles and hypersonic systems, offensive cyber capabilities, and the offense-defense relationship. Both sides should come prepared to explain the security concerns and perceptions that are influencing their respective choices on policy and capabilities development and to engage substantively on the concerns expressed by the other side. A near-term objective of these discussions could be to define "strategic stability" or a synonymous phrase in the U.S.-China context to better understand mutual concerns and lay a foundation for future progress.
- Establish a dedicated bilateral dialogue on the North Korean nuclear and missile threat and the link between U.S. missile defense development and the evolution of the North Korean threat. Given China's concerns about U.S. missile defense capabilities, and the role of North Korea's missile and nuclear programs in shaping U.S. thinking and development of missile defenses, the United States and China should initiate a dialogue on each country's perceptions of North Korea's capabilities—both present and future—and the corresponding threat, as well as the impact on each country's security policies, including with regard to the development of missile defenses.

Measures to Avoid and Manage Crises

While there is little experience of U.S.-China engagement on strategic stability and arms control issues, there is a modest track record of bilateral efforts to avoid and manage potential crises, including the Military Maritime Consultative Agreement²⁰ and the "Non-Targeting Agreement" from 1998;²¹ there are also two non-binding memorandums of understanding (MOUs) from 2014 that commit the two sides to notify each other of major military activities and to follow an agreed code of conduct for encounters at sea. While it is unclear how effective or how frequently used these agreements are, they can nevertheless provide a

foundation for more effective bilateral measures the two sides could pursue. These measures could include the following:

- Negotiate and implement an agreement for advance notification of ballistic missile launches. Such an agreement could be modeled on the 1988 U.S.-Soviet Ballistic Missile Launch Notification Agreement, which committed each country to provide the other with at least 24 hours' notice regarding the planned date, launch area, and area of impact for any launch of a strategic ballistic missile, including ICBMs or SLBMs. Particularly at a moment when both the United States and China are in the process of modernizing their nuclear delivery systems, such an agreement could help mitigate the risk of misperception and inadvertent escalation. Notably, a missile launch notification agreement between China and Russia has been in effect since 2010, although its requirements and provisions reportedly are less comprehensive than the U.S.-Soviet/ Russian agreement. Nevertheless, both the U.S.-Russian and Russian-Chinese agreements could provide useful starting points for discussions between Washington and Beijing on a comparable arrangement.
- Establish a U.S.-China "Nuclear Risk Reduction Center" (NRRC) link. The link, inspired by the U.S.-Russia NRRC as originally conceived in 1988, could be used initially as a quick and reliable means of communication on a range of strategic issues. The initial phase of operations could include a 24-hour watch by diplomatic and military personnel on events that could lead to a nuclear incident. Over time, the NRRC could potentially expand to supplement the voluntary exchanges of information and notifications called for under the 2014 U.S.-China MOUs on "Notification of Major Military Activities"²² and on "Rules of Behavior for Safety of Air and Maritime Encounters."²³ Sending and receiving such notifications through an NRRC channel could help to regularize these types of exchanges (perhaps encouraging more consistent use of these provisions) and familiarize Chinese officials with the practice, potentially facilitating that aspect of future agreements. Such a link could also be put into practice in facilitating a missile launch notification agreement.

Transparency

China's military culture is notoriously secretive, perhaps motivated by its smaller arsenal and fear that increased transparency and confidence-building measures could leave the country vulnerable to a nuclear first strike. However, Wu Riqiang, an associate professor at Renmin University of China, notes that China's nuclear transparency is improving, potentially because "China's nuclear forces have become stronger." However, officials in the United States remain frustrated by China's lack of what they consider basic transparency. Professor Wu concedes that China is still not open to providing more granular transparency, comparable to the level of detail available about U.S. nuclear policy and posture:²⁴

"There is a lack of specific operational-level principles for guiding China's nuclear-weapon development. For instance, what are the criteria for determining the scale of China's nuclear arsenal? Chinese experts usually give a very general response to such questions, as Xu Dongcheng and Liang Linlin did in saying that the country 'has always maintained its nuclear force at the minimum level required for national security."" To overcome China's skepticism about transparency, initial proposals for bilateral U.S.-China transparency should not be overly complex (though they can be expanded over time if progress is made) and should consider capabilities of concern to both sides, looking beyond the two countries' nuclear programs. These could include:

- Bilateral engagement and information exchanges on each country's nuclear modernization plans and the factors that could affect those plans moving forward. The United States and China could agree to annual meetings and exchanges of information on their planned investments in nuclear modernization over, say, the coming 10-year period, with the information updated each year. This could help provide clarity on the trajectory of those plans and provide a forum for the two sides to explain the rationales motivating their planned investments and to express any concerns. The annual meetings to exchange data should include discussion among military planners and policymakers about the motivating factors behind each side's modernization plans, with a view to helping each side better understand the way the other perceives and reacts to the broader security environment.
- Bilateral engagement and information exchanges on each country's plans for developing and deploying hypersonic delivery vehicles (whether nuclear, conventional, or dual-capable). This is an area where each side has concerns about the other's activities, including whether such systems will be nuclear or conventionally armed and whether even conventionally armed systems could have implications for strategic stability. A regularized exchange of information along the lines envisioned above for nuclear programs could help provide clarity and avoid worst-case assumptions, while also providing a venue for more focused discussions about the potential stability and crisis management implications of hypersonic systems.
- Information exchanges on planned deployments/capabilities of missile defense systems over a 10-year horizon, updated annually. This exchange would be modeled on a proposal the United States reportedly made to Russia in 2013 to exchange annually specific information about missile defense deployments (including numbers of launchers and interceptors) and about projected deployments over the following decade. While neither side would be locked into those projections, the information could provide a benchmark for longer-term planning.

Confidence-Building Measures

Given the well-known concerns of each side about certain capabilities and/or systems, the United States and China could agree to a range of measures to enhance confidence and address concerns. These could take a variety of forms, including unilateral steps or voluntary political commitments. Some options include the following:

• The United States could commit not to deploy ground-launched missiles (GLCMs or GLBMs), including hypersonic delivery vehicles, outside of the United States. This commitment would be a modest show of restraint and could help ease fears that the United States intends to deploy INF-range nuclear systems in the Asia-Pacific region. There is no compelling strategic need to deploy INF-range systems in the region—particularly given U.S. air- and sea-based conventional assets in the region—and there is little indication that U.S. allies are eager to serve as basing locations for such systems.²⁵

• Agree not to conduct intercept tests against orbital objects. While the United States and China have long been at odds on the issue of how to address the weaponization of space, a narrower agreement not to conduct kinetic intercept tests against orbital objects could more easily be defined and verified than broader prohibitions. The two countries also could seek to include India and Russia in such an agreement.

Given China's concern about the long-term trajectory of U.S. missile defense capabilities, a sustained improvement in the strategic relationship between the two countries will almost certainly require confidence-building steps related to missile defense and the broader offense-defense relationship. While U.S. domestic politics make formal limits on missile defense unlikely in the foreseeable future, there are relatively modest, practical measures the United States could offer as a step toward addressing Chinese concerns without diminishing U.S. security interests. The United States also should be prepared to discuss other issues emanating from the missile defense systems themselves, including Beijing's concern that the AN/TPY-2 radar system that supports Terminal High Altitude Area Defense (THAAD) could be used to track China's missile forces, potentially undermining its second-strike capability.

• The United States could state explicitly that U.S. missile defenses are meant to defend against rogue state and regional ballistic missile threats, not to threaten China's strategic nuclear deterrence capabilities. In addition, the United States could make clear that a reduction in the nuclear and missile threat posed by North Korea would reduce the need for U.S. missile defense capabilities. Such a clear linkage would not be unprecedented; President Obama made such a connection between Iran's nuclear and missile programs and U.S. missile defense capabilities in Europe during his 2009 Prague speech. However, such a statement would require careful coordination with U.S. allies in the region who have agreed to host U.S. missile defense capabilities, in particular Japan and South Korea.

Endnotes

- ¹ John Xie, "China Rejects U.S. Nuclear Talks Invitation as Beijing Adds to its Arsenal," VOA News, July 13, 2020. Available at: https://www. voanews.com/east-asia-pacific/voa-news-china/china-rejects-us-nuclear-talks-invitation-beijing-adds-its-arsenal.
- ² See Hans M. Kristensen and Matt Korda, "Nuclear Notebook: Chinese Nuclear Forces, 2020," *Bulletin of the Atomic Scientists*, December 7, 2020. Available at: https://thebulletin.org/premium/2020-12/nuclear-notebook-chinese-nuclear-forces-2020/.
- ³ U.S. Department of Defense, "Military and Security Developments Involving the People's Republic of China 2020" (Annual Report to Congress). Available at: https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF.
- ⁴ See Kristensen and Korda, "Nuclear Notebook: Chinese Nuclear Forces, 2020."
- ⁵ Michael Martina, "China Warns of Countermeasures If U.S. Puts Missiles on Its 'Doorstep," *Reuters*, August 5, 2019. Available at: https:// www.reuters.com/article/us-china-usa-defence/china-warns-of-countermeasures-if-u-s-puts-missiles-on-its-doorstep-idUSKCN1UW044.
- ⁶ See U.S. Department of Defense, "Missile Defense Review, 2019." Available at: https://media.defense.gov/2019/Jan/17/2002080666/-1/-1/1/2019-MISSILE-DEFENSE-REVIEW.pdf.
- ⁷ U.S. Department of Defense, "Missile Defense Review, 2019," 79.
- ⁸ Tong Zhao, "Narrowing the U.S.-China Gap on Missile Defense," Carnegie Endowment for International Peace, 2020, 6. Available at: https:// carnegieendowment.org/files/Zhao_USChina_MissileDefense.pdf.
- ⁹ Congressional Research Service, "Navy Aegis Ballistic Missile Defense (BMD) Program: Background and Issues for Congress," Updated December 23, 2020, 10. Available at: https://fas.org/sgp/crs/weapons/RL33745.pdf.

- ¹⁰ U.S. Department of Defense, "Ballistic Missile Defense Review Report," February 2010, 34. Available at: https://archive.defense.gov/bmdr/ docs/BMDR%20as%20of%2026JAN10%200630_for%20web.pdf.
- ¹¹ U.S. Department of Defense, "Nuclear Posture" (2010), 29.
- ¹² See James L. Schoff and Li Bin, "A Precarious Triangle: U.S.-China Strategic Stability and Japan," Carnegie Endowment for International Peace, November 7, 2017. Available at: https://carnegieendowment.org/2017/11/07/precarious-triangle-u.s.-china-strategic-stability-andjapan-pub-74628.
- ¹³ State Council Information Office of the People's Republic of China, "China's National Defense in the New Era," July 2019. Available at: http:// english.www.gov.cn/archive/whitepaper/201907/24/content_WS5d3941ddc6d08408f502283d.html.
- ¹⁴ Tong Zhao, "The Case for China's Participation in Trilateral Arms Control," in *Trilateral Arms Control? Perspectives from Washington, Moscow, and Beijing*, ed. Ulrich Kühn, Institute for Peace Research and Security Policy, 87. Available at https://ifsh.de/file/publication/ Research_Report/002/20200224_IFSH_Research_Report_002_final.pdf.
- ¹⁵ Kristensen and Korda, "Nuclear Notebook: Chinese Nuclear Forces," 2020.
- ¹⁶ Shan Jie, "China Slams US Nuclear Posture Review," *Global Times*, February 4, 2018. Available at: https://www.globaltimes.cn/ content/1088147.shtml.
- ¹⁷ Hans Kristensen and Matt Korda, "The Pentagon's 2020 China Report," Federation of American Scientists, September 1, 2020. Available at: https://fas.org/blogs/security/2020/09/the-pentagons-2020-china-report/.
- ¹⁸ Charles A. Richard, "Statement of Charles A. Richard, Commander U.S. Strategic Command, Before the Senate Committee on Armed Services," February 13, 2020. Available at: https://www.armed-services.senate.gov/imo/media/doc/Richard_02-13-20.pdf.
- ¹⁹ This engagement can—and should—include military participation from the United States and China. Existing U.S. law—as originally defined in the Fiscal Year 2000 National Defense Authorization Act (NDAA)—limits certain American-Chinese military-to-military contacts and exchanges, including those that cover the topics of "nuclear operations" and "military space operations," subjects that would inevitably be part of any strategic stability dialogue. While the law specifies that the prohibition is for exchanges or contacts that "would create a national security risk due to an inappropriate exposure" of the topics, and it can be argued that there is no such risk of exposure in a strategic stability dialogue, the legislation could still have a chilling effect that could prevent appropriate military-to-military dialogue. The U.S. Congress should reconsider this provision in future NDAAs to allow for dialogue that could strengthen transparency, stability, and security with China.
- ²⁰ See U.S. Department of State, "Maritime Matters Military Safety: Agreement Between the United States of America and the People's Republic of China," Treaties and Other International Acts Series 12924, January 19, 1998. Available at: https://www.state.gov/wp-content/ uploads/2019/02/12924-China-Maritime-Matters-Misc-Agreement-1.19.1998.pdf.
- ²¹ See "White House Fact Sheet—Achievements of U.S.-China Summit," June 27, 1998. Available at: https://clintonwhitehouse2.archives.gov/ WH/New/China/19980627-7898.html.
- ²² See "Memorandum of Understanding Between the United States of America Department of Defense and the People's Republic of China Ministry of National Defense on Notification of Major Military Activities Confidence-Building Measures Mechanism," November 4, 2014. Available at: https://dod.defense.gov/Portals/1/Documents/pubs/141112_MemorandumOfUnderstandingOnNotification.pdf.
- ²³ See "Memorandum of Understanding Between the United States of America Department of Defense and the People's Republic of China Ministry of National Defense Regarding the Rules of Behavior for Safety of Air and Maritime Encounters," November 10, 2014. Available at: https://archive.defense.gov/pubs/141112_MemorandumOfUnderstandingRegardingRules.pdf.
- ²⁴ Wu Riqiang, "How China Practices and Thinks About Nuclear Transparency," in *Chinese Nuclear Thinking*, ed. Li Bin and Tong Zhao, Carnegie Endowment for International Peace, 2016, 228. Available at: https://carnegieendowment.org/files/ChineseNuclearThinking_Final. pdf.
- ²⁵ Congress could also play a role in advancing this step by reinstating the 2020 NDAA prohibition on the expenditure of any funds for procurement or deployment of ground-launched, INF-range missiles (conventional or nuclear).