



Practical Ways to Promote U.S.-China Arms Control Cooperation

TONG ZHAO

The strategic competition between China and the United States is likely to remain intense for the foreseeable future. Arms control offers a way to help contain its severity and manage its consequences, while reducing the economic burden of defense spending for both countries in the aftermath of a global pandemic and the worst recession in decades.

To be sure, arms control will not eliminate all military competition or all the risks associated with the Sino-U.S. ideological confrontation. But it does offer a mutually beneficial way to mitigate the confrontation's most dangerous aspects, and, to date, neither government has seriously explored its potential.

So far, China has rejected joining a trilateral arms control negotiation with the United States and Russia but is keeping other arms control options open. Beijing's suspicion about the sincerity of U.S. President Donald Trump's administration to pursue cooperative arms control is unlikely to change in the near term, and Washington has not been able to offer concrete and mutually acceptable ideas for initial cooperation. But common interests require both countries to continue exploring potential ways to engage. Considering the

political realities, the first steps will have to be small ones. This paper offers several proposals to stimulate further thinking among scholars and officials in the hope that new debates could pave the ground for fruitful engagement at the government level.

As a fundamental prerequisite for success, the two countries must reach a shared understanding about what arms control cooperation can achieve. Much of the tension between China and the United States is driven by their intense conventional military competition in and around the West Pacific. Beijing believes that the only way to deter U.S. military intervention in Chinese territorial disputes within the First Island Chain (a series of archipelagos, including Okinawa and Taiwan, off the East Asian continental mainland) is to acquire military superiority over the United States and its allies in this region. Washington, on the other hand, has every interest in ensuring its continued ability to operate effectively in the area. Arms control will not be able to prevent this aspect of competition. However, both countries have a shared interest in ensuring that competition does not become so costly that it significantly undermines their own

*In case of questions or
follow up please contact:*

Douglas Farrar

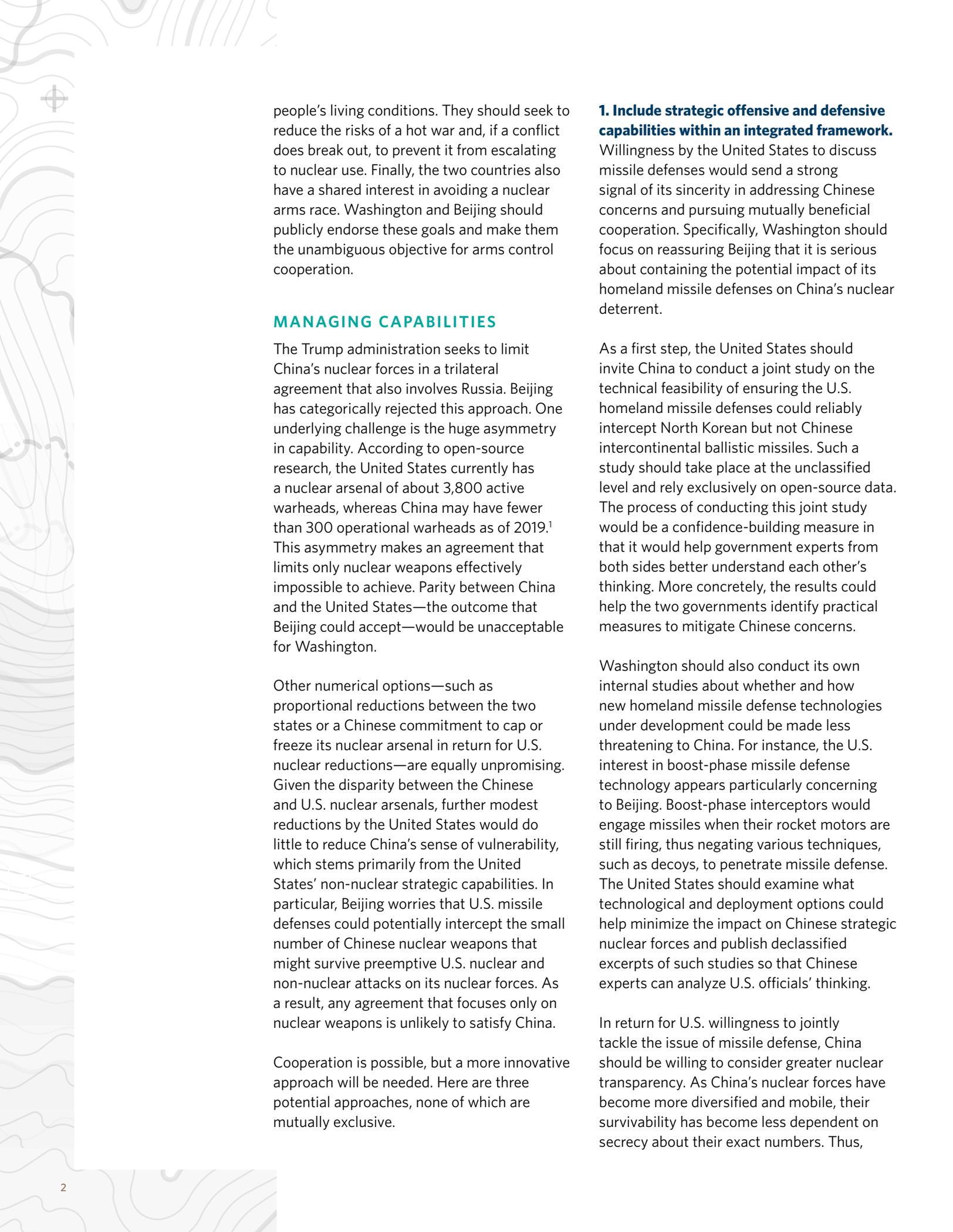
Managing Director, Communications

Douglas.Farrar@ceip.org

1779 Massachusetts Ave NW

Washington, DC 20036

+1 202 939 2372



people's living conditions. They should seek to reduce the risks of a hot war and, if a conflict does break out, to prevent it from escalating to nuclear use. Finally, the two countries also have a shared interest in avoiding a nuclear arms race. Washington and Beijing should publicly endorse these goals and make them the unambiguous objective for arms control cooperation.

MANAGING CAPABILITIES

The Trump administration seeks to limit China's nuclear forces in a trilateral agreement that also involves Russia. Beijing has categorically rejected this approach. One underlying challenge is the huge asymmetry in capability. According to open-source research, the United States currently has a nuclear arsenal of about 3,800 active warheads, whereas China may have fewer than 300 operational warheads as of 2019.¹ This asymmetry makes an agreement that limits only nuclear weapons effectively impossible to achieve. Parity between China and the United States—the outcome that Beijing could accept—would be unacceptable for Washington.

Other numerical options—such as proportional reductions between the two states or a Chinese commitment to cap or freeze its nuclear arsenal in return for U.S. nuclear reductions—are equally unpromising. Given the disparity between the Chinese and U.S. nuclear arsenals, further modest reductions by the United States would do little to reduce China's sense of vulnerability, which stems primarily from the United States' non-nuclear strategic capabilities. In particular, Beijing worries that U.S. missile defenses could potentially intercept the small number of Chinese nuclear weapons that might survive preemptive U.S. nuclear and non-nuclear attacks on its nuclear forces. As a result, any agreement that focuses only on nuclear weapons is unlikely to satisfy China.

Cooperation is possible, but a more innovative approach will be needed. Here are three potential approaches, none of which are mutually exclusive.

1. Include strategic offensive and defensive capabilities within an integrated framework.

Willingness by the United States to discuss missile defenses would send a strong signal of its sincerity in addressing Chinese concerns and pursuing mutually beneficial cooperation. Specifically, Washington should focus on reassuring Beijing that it is serious about containing the potential impact of its homeland missile defenses on China's nuclear deterrent.

As a first step, the United States should invite China to conduct a joint study on the technical feasibility of ensuring the U.S. homeland missile defenses could reliably intercept North Korean but not Chinese intercontinental ballistic missiles. Such a study should take place at the unclassified level and rely exclusively on open-source data. The process of conducting this joint study would be a confidence-building measure in that it would help government experts from both sides better understand each other's thinking. More concretely, the results could help the two governments identify practical measures to mitigate Chinese concerns.

Washington should also conduct its own internal studies about whether and how new homeland missile defense technologies under development could be made less threatening to China. For instance, the U.S. interest in boost-phase missile defense technology appears particularly concerning to Beijing. Boost-phase interceptors would engage missiles when their rocket motors are still firing, thus negating various techniques, such as decoys, to penetrate missile defense. The United States should examine what technological and deployment options could help minimize the impact on Chinese strategic nuclear forces and publish declassified excerpts of such studies so that Chinese experts can analyze U.S. officials' thinking.

In return for U.S. willingness to jointly tackle the issue of missile defense, China should be willing to consider greater nuclear transparency. As China's nuclear forces have become more diversified and mobile, their survivability has become less dependent on secrecy about their exact numbers. Thus,

Beijing should be able to shed more light on the overall size of its current nuclear arsenal and on its future modernization plans.

2. Integrate nuclear and outer space arms control efforts.

Chinese concerns about U.S. military superiority in outer space are intertwined with its concern about the survivability of its nuclear deterrent. China fears that increasingly advanced space-based U.S. sensors could help detect and track China's nuclear weapons and thus help the United States execute a first strike. The effectiveness of U.S. missile defense is also bolstered by its space-based sensors. In fact, historically, China's concerns about U.S. space capabilities were primarily focused on their connection to ballistic missile defense. Now, renewed U.S. interest in developing space-based interceptors reminds Beijing of the Strategic Defense Initiative—a program under former U.S. president Ronald Regan that sought to defend the United States against all ballistic missile threats. Such a program could pose a profound threat to China's arsenal, which is much smaller than the Soviet Union's was in the 1980s. Indeed, for two decades, China has refused to give up the option to produce more weapon-grade fissile material—which would enable it to expand its nuclear arsenal—because of its concerns about the United States' superior space capabilities.

Today, as U.S. space capabilities are becoming ever more advanced, China's fears about them are becoming broader and less centered on their contribution to missile defense. Nonetheless, the notion that nuclear arms control requires arms control in outer space still shapes Chinese thinking. Moreover, even as a comprehensive outer space treaty remains out of reach, certain more modest steps are becoming possible.

As China's own space capabilities advance and as its own military and civilian dependence on space assets grows, Beijing's and Washington's interests are becoming more aligned. For instance, China appears to be increasingly skeptical of the practical utility of direct-ascent anti-satellite weapons (DA-ASAT). After being launched into space,

such weapons use kit-to-kill technology to collide with enemy satellites. However, if directed against a U.S. satellite, the debris that such an attack would generate might also affect Chinese satellites. As more non-debris-generating ASAT technologies become available to China, Beijing should explore a joint moratorium on DA-ASAT testing with Washington, which has long expressed concern about debris.

The United States should also provide greater transparency on those programs of most concern to China. These programs include space-based missile defense interceptors; reusable spacecraft like the X-37B, which generates concerns about secret and cutting-edge U.S. surveillance and attack technologies; and low-earth-orbit small-satellite constellations, which lead many Chinese experts to worry that the numerous satellites flying over Chinese territory may carry military sensors and weapons. Greater transparency could help contain threat inflation—a serious problem within quarters of the Chinese expert community.

In return, China should consider offering more self-restraint on the development of its nuclear capabilities. For example, Beijing could adopt a clear moratorium on fissile material production (even if qualitative or quantitative limits on China's nuclear forces will remain politically challenging).

3. Address strategic and theater weapon systems—whether nuclear or non-nuclear—simultaneously.

This approach would seek to simultaneously mitigate Chinese concerns about the United States' first-strike capability and U.S. concern about China's regional military capabilities. Specifically, the two countries should explore the possibility of reaching an arms control agreement that places a single limit on land-based launchers of missiles with ranges greater than 500 kilometers (310 miles), submarine-launched ballistic missile launchers, and heavy bombers, regardless of whether these systems are armed with nuclear or non-nuclear warheads. Such an agreement would, in essence, combine key elements of



the New Strategic Arms Reduction Treaty (New START), which limits strategic systems, and the now-defunct Intermediate-Range Nuclear Forces Treaty, which limited land-based missiles with ranges between 500 and 5,500 kilometers (approximately 310–3,400 miles). Today, China has a clear advantage in land-based medium- and intermediate-range missile systems, while the United States has a much larger stockpile of strategic systems. Critically, however, open-source information suggests that when these two categories are combined, China and the United States have similar numbers of launchers. The proposed agreement would enable them to maintain this equality in the future, while preserving their ability to decide how to strike the right balance between theater and strategic weapons. Given that Russia also has a similar number of such launchers, this option could be explored in U.S.-Russia-China trilateral arms control talks as well.

REDUCING ESCALATION RISKS

Cooperative measures to reduce the risk of nuclear use are low-hanging fruit for U.S.-China arms control because the two states already have a strong shared interest in minimizing the risk of nuclear war. In particular, both countries recognize the need to understand and manage the impact of new military technologies on escalation.

China and the United States should jointly examine the issue of entanglement between nuclear and non-nuclear military technologies. Officials from both countries are increasingly aware of the potential escalatory risks of entangled nuclear and non-nuclear systems. With the growth in non-nuclear threats to nuclear forces and their command-and-control capabilities, as well as the more widespread integration of nuclear and conventional systems, the line between the nuclear and non-nuclear domains is becoming less clear, introducing new risks of misunderstanding into crises. There is increasing acknowledgement, for example, that dual-capable missile systems,

which can carry either nuclear or conventional warheads, could exacerbate the risks of inadvertent escalation during conventional conflicts as the target country might be unable to determine—or might wrongly determine—whether it was under nuclear or conventional attack.² Conversely, if a country's dual-capable missiles were loaded with nuclear warheads and attacked by conventional weapons, policymakers would also face a difficult choice between launching conventional or nuclear retaliation.

There is no shared understanding about the prevalence and severity of such risks. Moreover, neither state has a good sense of the other's perception of the risks. A joint study by U.S. and Chinese government experts using open-source data to evaluate the scope and severity of the escalation risks created by entanglement would be helpful, paying particular attention to dual-capable missiles. Based on the findings, the two countries could hold bilateral exchanges on what measures each government is taking and will take to address the problem.

For example, China should consider publicly declaring the warhead types associated with each missile type to reduce ambiguity about whether it can be armed with nuclear warheads, conventional warheads, or both. The United States should explain its thinking about how to address the warhead ambiguity around its dual-use bombers, and, if it deploys nuclear-armed sea-launched cruise missiles in the future, over any ships or submarines that carry nuclear and conventional cruise missiles. As a joint confidence-building measure, U.S. and Chinese government experts should study the possibility of verifying warhead types for various delivery systems, drawing lessons from the U.S.-Russian experience.

The United States and China should discuss the costs and benefits of launch under attack (LUA). A LUA posture involves maintaining nuclear forces on high alert so missiles can be launched after an incoming nuclear attack

is detected but before enemy warheads have detonated. To date, China has reportedly kept nuclear warheads and land-based ballistic missiles separate and has planned to ride out an attack before retaliating. Now, at the same time that advanced strategic early-warning technologies are becoming available to China, some Chinese analysts view LUA as militarily useful and politically desirable. In fact, the U.S. practice of maintaining this option for itself is an important inspiration for Chinese thinking.

That said, because of technological developments such as accurate dual-capable missiles of ever longer ranges and maneuverable hypersonic missiles, LUA is becoming more dangerous. Dual-capable missiles increase the risk of a state's misjudging the nature of an incoming attack, and hypersonic missiles can further suppress the target country's response time by evading early-warning systems. As a result, the United States should reconsider its policy of maintaining the LUA option, while China should refrain from adopting such a posture itself. As a first step in this direction, the two countries should jointly examine the security implications of LUA in the contemporary security environment.

PAVING THE WAY FOR FORMAL ARMS CONTROL

Although there has been debate within the United States about the merit of arms control cooperation with China, there is much wider and deeper skepticism within the Chinese policy community about the value of pursuing arms control with the United States. Such skepticism partly stems from a lack of experience in negotiating and implementing arms control agreements and thus undervaluing their potential contributions. This lack of experience presents a more fundamental challenge than any specific security concern to starting U.S.-China arms control cooperation. Long-term and wide-ranging engagement programs are necessary to gradually build capacity and address deeply rooted skepticism.

The United States should start a dedicated engagement program with China on arms control verification. Many Chinese experts have two deep and genuine concerns about verification: whether it can detect and deter cheating by the more technologically advanced party and whether it would enable espionage. The United States could invite Chinese officials and experts to observe mock inspections such as those conducted to train U.S. inspectors for New START. Such firsthand experience would help China determine whether a robust verification regime could address cheating concerns while protecting legitimate military secrets between two parties that do not trust each other.

Furthermore, Washington should develop a comprehensive briefing program for Chinese experts about its cooperation on verification with Russia. Such unclassified briefings should introduce, in detail, how the verification regimes for U.S.-Russian arms control agreements were designed and implemented and how Washington and Moscow resolved disagreements and addressed concerns. The Chinese side should include relevant participants from the military, defense industry, foreign ministry, academia, and research institutes to ensure broad-based engagement. Before such exchanges help to build confidence, the United States should not press China on accepting intrusive on-site inspections but should instead focus on arms control options that can be verified through national technical means.

China should welcome such engagement, recognizing that it would be a relatively easy joint effort and could lead to further cooperation to its benefit. China could use this opportunity to showcase its own progress in developing verification technologies and methodologies and to raise verification challenges that it believes are unique to China's capabilities and posture. These issues can be topics for further and more in-depth joint research.

Unilaterally, or together with Russia, the United States should brief China on existing U.S.-Russia confidence-building measures.

Examples of these confidence-building measures include notifications of missile and space launches and the exchange of telemetry data from missile flight tests under New START. An in-depth understanding of what security benefits Washington and Moscow have sought to achieve through such transparency and how they have managed to address technical and operational obstacles could help Chinese experts better examine the potential applicability and utility of similar measures (suitably adapted) in the U.S.-China context. Such exchanges would provide an opportunity for China to examine the role of transparency as a potentially necessary building block for achieving cooperative security.

CREATING THE RIGHT POLITICAL ENVIRONMENT

Starting U.S.-China arms control cooperation requires the right political environment. It is politically unacceptable to Chinese leaders if they are seen to agree to start arms control talks under U.S. pressure. As a result, nothing can happen while the bilateral political relationship remains highly confrontational. Even after the political atmosphere calms, the U.S. government needs to show it is genuinely interested in pursuing mutually beneficial cooperation as Beijing is deeply skeptical of the Trump administration's motives in calling for China to engage with arms control.

Direct engagement between top U.S. and Chinese leaders would be a good step in the right direction. Such engagement could happen as part of the proposed P5 summit on arms control and international security issues or in a bilateral summit. The goal of achieving cooperative security through arms control aligns with Chinese President Xi Jinping's idea of promoting "a community with a shared future for mankind."³ His personal endorsement of arms control will be critical for stimulating domestic interest in and discussion of arms control options and for overcoming long-standing bureaucratic hurdles. After the U.S. presidential election,



Tong Zhao is a senior fellow in Carnegie's Nuclear Policy Program based at the Carnegie-Tsinghua Center for Global Policy.

Washington should launch a high-level effort to engage with the Chinese leader and seek his support of a process to explore the possibility of U.S.-China arms control.

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NOTES

- 1 For information on the U.S. nuclear arsenal, see Hans M. Kristensen and Matt Korda, "United States Nuclear Forces, 2020," *Bulletin of the Atomic Scientists* 76, no. 1: 46-60, <https://doi.org/10.1080/00963402.2019.1701286>. For information on the Chinese arsenal, see Office of the Secretary of Defense, Annual Report to Congress: Military and Security Developments Involving the People's Republic of China, Washington DC, 2020, 87, <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>.
- 2 James M. Acton, "Is It a Nuke?: Pre-Launch Ambiguity and Inadvertent Escalation," Carnegie Endowment for International Peace, April 9, 2020, 3, <https://carnegieendowment.org/2020/04/09/is-it-nuke-pre-launch-ambiguity-and-inadvertent-escalation-pub-81446>.
- 3 "Concept of 'Community With Shared Future for Mankind' Being Transformed Into Action: Xi," *China Daily*, updated December 1, 2017, https://www.chinadaily.com.cn/china/2017-12/01/content_35160220.htm.

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