



## An Exchange of Next Generation U.S.-China Nuclear Experts

### Summary

On June 8, 2011, a group of about twenty graduate students and young professionals met at the Doubletree Alana Waikiki in Honolulu, Hawaii for a daylong session to discuss various aspects of the strategic nuclear relationship between the United States and China. The event, which was cosponsored by the CSIS Project on Nuclear Issues (PONI) and the Pacific Forum CSIS Young Leaders program, featured four ninety-minute sessions, each opened by presentations of two discussion papers by a U.S. and Chinese participant respectively. In the two days before the exchange, participants were able to observe the U.S. Naval Postgraduate School's *U.S.-China Strategic Dialogue*, which helped frame the discussions. Special thanks are due to Brad Glosserman, John Warden, and Adrian Yi for making the event possible.

The views expressed here do not necessarily represent the views of the respective governments or the group of conference participants as whole.

### Session I: Conventional Strike and Preemptive Doctrines

To start, U.S. and Chinese participants engaged in a spirited discussion on the implications of developments in conventional strike capabilities in both the U.S. and China.

A Chinese presenter began by laying out the military and technical aspects of the problem, emphasizing the salience of conventional strike weapons in the strategic balance. The presenter argued that, as currently constituted, U.S. conventional forces are unlikely to enable a preemptive option against Chinese nuclear forces. The majority of Chinese forces are either mobile or protected in deeply buried facilities, and the United States would find it extremely difficult to identify all relevant missiles and tunnel entrances.

However, it was stressed that many in China are concerned that U.S. conventional capabilities could grow and, in concert with improving missile defense and Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) capabilities, pose a threat to China's strategic deterrent. What's more, if the U.S. decides to develop conventional prompt global strike (CPGS) beyond a niche capability, there are risks of misperception and misunderstanding. In a potential conflict, the U.S. might intend to strike Chinese conventional missiles, but accidentally strike nuclear armed missiles, triggering inadvertent escalation.

A U.S. presenter spoke about the rationale, evolution, and likely trajectory of U.S. conventional prompt global strike capabilities. Emphasizing that CPGS is not necessarily associated with preemption, the presenter explained that U.S. interest in the program stemmed from the absence of long-range prompt options that are non-nuclear. The presenter noted that the U.S. recognizes the strategic stability implications of these weapons but is likely to continue moving forward, even in the face of budgetary constraints, because of the utility of the capability. For that reason, the presenter argued, the U.S. is unlikely to agree to formal constraints on CPGS deployments.

Discussion among the group touched on a number of issues, including CPGS' relation to the anti-access and area-denial (A2/AD) problem, distinguishing nuclear from conventional long-range prompt weapons, implications for China's strategic forces, whether red lines could be drawn and what they would be, and the role of U.S. allies and other regional actors in CPGS. More broadly, participants engaged in a thorough and searching discussion of U.S. and Chinese force postures and perspectives on what changes could be made to make these postures more stabilizing.

There was no agreement among or between U.S. and Chinese participants on when CPGS or A2/AD capabilities would be used. Chinese participants insisted that China's new ballistic missiles are defensive, while acknowledging that they're designed and deployed with U.S. carriers and regional bases in mind. They were unwilling to speculate as to whether preemption is a possibility, instead emphasizing that the primary function of these capabilities is deterrence.

Regarding the issue of ambiguity, a couple of U.S. participants suggested that China consider separating its nuclear and conventional missile forces to prevent ambiguity or misperception. The Chinese presenter agreed that there is some merit to the idea, but said there doesn't seem to be discussion in China about the possibility. By contrast, a separate participant said that the ambiguity created by collocating forces might in fact enhance stability by deterring the U.S. from striking these forces.

## **Session II: Developments in Missile Defense**

The second session explored U.S. missile defense plans and how they might affect the U.S.-China strategic relationship. The session opened with an overview of U.S. capabilities and plans for future deployments. A U.S. presenter outlined the new phased, adaptive approach to missile defense, which focuses on countering short- and medium-range missiles, while maintaining flexibility to respond to future threats. Consistent with the strategy, the United States will continue to develop and deploy PATRIOT batteries, AN/TPY-2 X-band radar, and THAAD batteries, as well as SM-3 Block IA interceptors around the world. The United States will also maintain 30 ground-based midcourse interceptors deployed in Alaska and California and is involved in discussions with Russia about a joint missile defense system (though a substantive agreement seems unlikely).

According to the U.S. presenter, missile defense serves to 1) dissuade countries from acquiring ballistic missiles by reducing their perceived utility; 2) deter missile attacks for fear of operational failure; and 3) defend the United States, as well as its friends and allies, from missile attacks. In the United States, there is a strong consensus both that limited missile defense is useful in countering the missile programs of states like Iran and North Korea and that formal limits on missile defense are not in the U.S. interest. However, there is disagreement about the types and number of interceptors that should be deployed.

In closing, the U.S. presenter acknowledged Chinese concerns, noting that many in China feel that as missile defense technology matures, it could threaten China's nuclear deterrent, making nuclear coercion a possibility. In particular, China is concerned with space sensors, which could track Chinese missiles early in flight, and with more advanced deployments, such as the planned SM-3 Block IIB. China is also concerned that interceptors deployed at sea would give the United States a surge capability. Given these concerns, China is likely to invest in some combination of the following: countermeasures, increased survivability, anti-satellite weapons, and/or increased numbers of nuclear-armed missiles. It remains unclear which route China will pursue.

A Chinese presenter outlined Chinese thinking about missile defense. According to the presenter, the evidence suggests that China does not see missile defense as an immediate threat to its ICBMs. It is neither developing more fissile materials nor actively pursuing countermeasures to circumvent missile defense. China does,

however, question the credibility of US statements regarding the intent of missile defense to guard against only “rogue states”. The presenter argued that U.S. credibility might be enhanced if the United States forswore capabilities that would be more effective against missiles deep within Chinese territory.

The discussion shifted to the effects of missile defense on strategic stability. A Chinese participant suggested that the situation could be improved by negotiations on a treaty to prevent the deployment of space-based weapons, an area of great concern to China. The United States and China might also consider an agreement on a joint data exchange center or a framework for the joint assessment of threats. However, several U.S. participants countered that such a forum may be difficult to execute because, although the United States expressed a need for a joint code of conduct following the Chinese anti-satellite test, it has been hesitant to discuss more intensive matters relating to space. In addition, there is disagreement on the definition of space weaponization, with China excluding ground-based anti-satellite tests.

To build confidence U.S. participant identified a number of areas for bilateral discussions, such as ground-based midcourse interceptors (which China has also tested), a capabilities assessment of the North Korean missile program, early warning, or possibly a more technical discussion about intercept capabilities. Such measures might increase knowledge of both capabilities and intentions, and prevent Chinese misunderstanding.

One issue that triggered debate was boost-phase missile defense. According to one Chinese participant, a U.S. shift to boost-phase, instead of mid-course, intercept could help assure China because such capabilities wouldn’t threaten missiles deep within Chinese territory. U.S. participants pointed out that a shift to boost-phase intercept could exacerbate Chinese concerns by removing China’s ability to penetrate U.S. missile defense using multiple independent re-entry vehicles and countermeasures. Other U.S. participants noted that many questions remain about the technical feasibility of boost-phase intercept.

U.S. discussants reiterated that U.S. missile defense in East Asia is primarily targeted at North Korea. Therefore, it is in China’s interest to both rein in North Korean provocations and prevent the expansion of North Korea’s ballistic missile program. If that doesn’t happen, the United States is likely to solidify its alliances and increase the size and sophistication of its missile deployment. One U.S. participant argued that, at some point, China will be forced to choose between its relationship with North Korea and its relationship with the United States.

There was agreement among all participants that it is in the interest of neither the United States nor China for China to feel that its strategic nuclear deterrent is threatened. One U.S. participant suggested that it might be in the U.S. interest for China to modestly expand the size and sophistication of its nuclear arsenal to the point where U.S. missile defense is not a strategic concern. While the United States should accept such developments, Chinese transfers of advanced missile and countermeasure technology to Iran or North Korea would exacerbate tensions and harm the U.S.-China relationship.

### **Session III: Strategic Stability in the 21<sup>st</sup> Century**

The third session focused on the definition, concept and role of strategic stability between the United States and China. According to the Chinese presenter, strategic stability describes a stable situation under which the main strategic powers establish mutual security relations between each other. During the Cold War, the concept of strategic stability had two components: crisis stability and arms race stability. Of these two components, arms race stability is the least applicable to U.S.-China relations because China is not pursuing regional or global hegemony. Rather, both countries should focus their efforts on increasing crisis stability.

The presenter argued that the concept of strategic stability should be broadened from the narrow, nuclear-focused definition of the Cold War to include more aspects of interstate relations. Strategic stability is not exclusively about nuclear – or even military – deterrence, but rather encompasses political and economic relations between the United States and China. Given this kind of definition, mutual deterrence and mutual vulnerability are not essential ingredients of stable strategic relations. Instead, the concept of mutual strategic confidence should take precedence.

Yet, the Chinese presenter argued that, for the United States, strategic stability is important for global hegemony. Thus, when the United States talks about seeking strategic stability with China, it is really talking about maintaining strategic superiority. The United States uses its nuclear forces to maintain hegemony over China and is strengthening its capabilities through missile defense and space weapons to ensure continued military dominance.

Regarding the future of strategic stability between the United States and China, the Chinese presenter argued that stability between these two states is different from the stability of the Cold War. Then, strategic stability was dominated by two roughly equal powers – the United States and the Soviet Union. Now, strategic stability between the United States and China is between a hegemon and rising power. Whereas the United States seeks strategic stability in the global realm, China seeks only stability at the regional level, especially in the Taiwan Strait. In addition, strategic stability between the United States and China is complicated by an asymmetry of military (including nuclear) power. However, given China's military modernization, this gap is shrinking. Consequently, to maintain stable strategic relations, both countries must adjust to changing strategic conditions.

A U.S. presenter noted that recent discussions about strategic stability are the result of the Obama administration's Nuclear Posture Review report calling for "strategic stability dialogues" with Beijing (and Moscow). The presenter argued that there is tension between the NPR's objective of enhancing strategic stability with China and Russia and the objective of reducing the role of nuclear weapons in U.S. national security strategy. One of the ways in which the Obama administration has sought to reduce the role of nuclear weapons is by emphasizing advanced offensive and defensive conventional capabilities in deterrence, including CPGS and missile defense. These capabilities, U.S. officials argue, can play a bigger role in deterrence. Yet, those capabilities could undermine China's and Russia's strategic deterrents and undermine strategic stability.

While there was some disagreement about the importance of the Cold War concept of strategic stability, it generally received support from both Democratic and Republican administrations. The concept initially grew out of work done at RAND in the 1950s on the vulnerability of U.S. strategic bombers to a Soviet surprise attack. Given these vulnerabilities, the best option for the United States at the time was to launch the bombers upon immediate warning of an impending Soviet attack, thereby ensuring that they would survive a Soviet strike and be able to inflict a nuclear retaliation. However, defense analysts soon realized that if the best U.S. response to vulnerability was to launch on warning of attack, this was also true for the Soviet Union. Over the next few decades, this basic insight about the likely response to vulnerability created a strong push toward making nuclear forces survivable, which generated a cottage industry of increasingly quantitative nuclear analysis, including assessments of the necessary number of weapons to create a survivable nuclear force.

Current debates within the United States over the definition and concept of strategic stability reveal three camps. "Traditionalists" believe that the Cold War definition is still correct; strategic stability should be defined as comprising crisis stability, first strike stability and arms race stability. Others wish to move beyond the entire concept of strategic stability – the "transcenders" seek to change to nature of U.S.-China (and U.S.-Russia)

relations from one in which security is based on the threat of mutual annihilation to one in which relations are characterized by mutual security, confidence-building measures, cooperation, international law, and eventual abolition. Finally, another group believes the concept of strategic stability should be expanded to include a broader range of factors. “Expanders” include crisis stability, first strike stability and arms race stability, and issues of political and economic relations as well.

Discussion was robust. One U.S. participant noted that while many assumed that strategic stability was a Cold War term, the concept – if not the name – predates that period. Crisis stability was a factor in the start of the First World War, since at that time the major powers believed – incorrectly, as it turned out – that a great advantage could be gained by attacking first. Neither Washington nor Beijing wants a relationship that approximates that between the United States and the Soviet Union during the Cold War. Therefore, the participant argued, it might be better to come up with a different term to describe the concepts associated with strategic stability.

Another U.S. participant brought up the issue of transparency and noted that there is a lot of discussion in the business literature about it. Mutual trust is built on transparency, but also on shared successes. Regarding nuclear weapons, the participant argued, transparency involves the ability to see, touch, and count weapons, which would build confidence that we could take each other’s statements at face value. Another U.S. participant noted that the real source of mistrust in Washington is the absence of a good understanding of Chinese thinking or planning. To foster trust and open possibilities for transparency, both countries could develop white papers that answer specific questions.

A Chinese participant countered that the biggest issue with transparency in China is not international but domestic – access to information of all kinds is limited in China. In fact, because of censorship, some analysts in other countries may know more about China’s nuclear strategy and nuclear weapons than Chinese analysts do. However, as China moves toward democracy, the participant believes it will become more transparent.

The last part of the discussion focused on China’s No First Use policy. A Chinese participant noted that China’s NFU policy is clear, and that its nuclear strategy is purely defensive. A U.S. participant argued that China could not convince most Americans of the sincerity of its NFU commitment. US logic insists that if China truly believed the United States was about to launch a first strike, China would have to want to launch first, violating its NFU pledge. Another U.S. participant disagreed, arguing China’s NFU is pledge is credible because the capabilities gap is so large that China’s first use of nuclear weapons would be irrational.

#### **Session IV: Moving from Bilateral to Multilateral Arms Control**

Significant common ground exists between the Chinese and US perspectives on the prospects for multilateral arms control. Both groups echoed the commitments made by their respective governments to negotiate a multilateral arms control agreement but agreed that it was premature to discuss such an agreement. Setting aside the prospects for a multilateral arms control agreement, the participants discussed the concerns of each side and identified a number of steps that could be taken to lay the foundation for future Chinese participation in multilateral arms control.

The U.S. speaker highlighted a number of the stumbling blocks in the United States to beginning multilateral arms control talks. Multilateral negotiations would be unlikely to occur until after an additional round of bilateral U.S.-Russian arms reductions and, potentially, the ratification of the CTBT and the negotiation of an FMCT. All of these agreements would face significant opposition in the U.S. Congress and are unlikely to be achieved in the near term. U.S. concerns about the potential for a Chinese sprint to parity, China’s lack of

nuclear transparency, and verification would also have to be addressed if China is to be integrated into a multilateral arms control arrangement. It may be more effective to focus on agreements that do not place quantitative limits on systems but rather attempt to establish rules of the road, for instance non-interference with national technical means.

The Chinese speaker noted that arms control is a subject of great sensitivity in China due to a sense of vulnerability and weakness in the context of the Sino-American relationship and that a bilateral or multilateral agreement would be difficult to achieve in the near future; however, the participant identified a number of reasons for optimism. China's attitude towards and involvement in the international community – and particularly in global nonproliferation regimes – has shifted significantly over the past several decades. While little pressure exists, internally or externally, to encourage China to consider a multilateral arms control agreement, this would likely change if the U.S. and Russia made further reductions to their nuclear arsenals. Also important to encouraging Chinese participation in arms control would be a broader regional effort that addressed Chinese security concerns and made arms control a national interest of China.

Both U.S. and Chinese participants agreed that China must become more transparent but disagreed upon the nature of transparency. U.S. participants pointed out that there are limits on US demands for transparency and that the United States seeks information similar to that provided by the Russians in the New START agreement rather than unlimited access to China. Chinese participants noted resistance to transparency from some portions of the Chinese military-industrial complex but felt that some steps towards greater transparency would be possible. Greater clarity on the size of the defense budget would be possible, but Chinese participants conceded it was unlikely that Beijing would release information about its nuclear weapons due to the small size of the Chinese arsenal.

Both the U.S. and Chinese participants agreed that agreements that focused on qualitative measures and rules of the road would be an appropriate first step. Verification of such an agreement was raised as a major concern. U.S. participants expressed concern that China would not be willing to allow the U.S. sufficient access for an agreement to be domestically acceptable. A Chinese participant pointed out that China has signed on to an increasing number of treaties - including bilateral agreements with Russia to limit troop deployments in border areas, as well as the Open Skies treaty - that have verification components. It was also pointed out that China is a member of the Chemical Weapons Convention (CWC) and that a quarter of all CWC verification inspections occur in China each year without incident.

Extended deterrence was another important topic. US participants argued that a no first use pledge, which the Chinese government advocates that all nuclear states sign, would have significant implications for Japan, South Korea and other U.S. allies in the region. Some American participants expressed concern that a weakened U.S. nuclear umbrella might encourage Japan to seek its own nuclear arsenal. Other American and Chinese participants were convinced that it was unlikely that Japan would seek to become an independent nuclear power because of ingrained pacifistic and anti-nuclear sentiments. While the two parties disagreed about the likelihood of a crisis that might lead to a China-Japan conflict in which the U.S. nuclear security guarantee would play a role, it was agreed that it was important to discuss even low likelihood scenarios because of their implications for the region.

The discussion identified a number of steps that could promote stability in the region without placing limits on the number of systems deployed by each state. U.S. and Chinese participants felt that establishing norms of behavior and rules of the road are a good step. Chinese participants in particular felt that agreements that avoid the problem of creating a verification regime would be easiest to implement. Potential steps included developing rules of the road for space and a non-interference agreement for national technical means and

early warning satellites. One US participant suggested that a ban on MIRVing silo-based ballistic missiles might improve strategic stability in the Sino-American relationship. While Chinese participants expressed concerns about the verification of such an agreement, they agreed that it was plausible.

While discussion of the details of a future multilateral arms control agreement is premature, a good first step would be identifying bilateral confidence and security building measures and avoiding issues such as verification measures. Additional research should be conducted to examine the causes for the changes in Chinese attitudes towards international agreements to better identify ways of building support for arms control in China in the future.

### **Summary of Recommendations**

- U.S. conventional strike should remain a niche capability to avoid Chinese fear of first strike vulnerability and the potential for misunderstanding, which may cause inadvertent conflict escalation.
- Even in the face of budgetary constraints, the United States should continue developing conventional prompt global strike capabilities to guarantee long-range prompt options that are non-nuclear. As a corollary, the United States should not agree to formal constraints on CPGS deployment.
- China should consider separating its conventional and nuclear missile forces to prevent misunderstanding. It should be cognizant, however, of the potentially stabilizing deterrent function such ambiguity could promote.
- The United States should avoid missile defense capabilities that would be effective against missiles located deep within China.
- To prevent misunderstanding, bilateral discussions should be held over ground-based midcourse interceptors, a capabilities assessment of the North Korean missile program, early warning, or a technical discussion about intercept capabilities.
- To avoid the necessity for a more sophisticated U.S. missile defense capability in East Asia, China should work to reign in North Korean provocations and ballistic missile development.
- If U.S. missile defense technology and deployments advance, China should modernize its nuclear forces to the point that it does not feel threatened by U.S. capabilities. This modernization should consider countermeasures, increased survivability, and an expanded number of deployed missiles. The United States should welcome these developments, provided that these measures increase China's confidence in its deterrent.
- The United States and China should each retain an effective and survivable second-strike nuclear force, in order to remain confident in their ability to retaliate with nuclear weapons.
- The U.S. and China should consider replacing the term "strategic stability" with "nuclear forces stability," because the former has connotations of hostility that originated in the Cold War and does not apply to the asymmetrical U.S.-China nuclear relationship. At the same time, the concept of strategic relations between the U.S. and China should be expanded to include non-military elements of bilateral relations.
- Precursors to future multilateral arms control should be established. For the U.S., these include an additional round of U.S.-Russian reductions, U.S. ratification of the CTBT, and the negotiation of an FMCT. For China they include measures to improve nuclear transparency – such as openness about the size of China's defense budget. This early process should focus on qualitative measures and rules of the road while avoiding verification measures.
- The United States and China should consider beginning the multilateral arms control process by proposing a treaty centered on a ban of silo-based MIRVed missiles, which would avoid the problem faced by reduction treaties of differing force levels and establish a verification regime that could ground future agreements. Other potential areas of focus include rules of the road for space and a non-interference agreement for national technical means and early warning satellites.