

Center for Security Studies

STRATEGIC TRENDS 2022

Key Developments in Global Affairs



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Acknowledgments

Strategic Trends is an annual publication of the Center for Security Studies (CSS) at ETH Zurich. It offers concise analyses of major developments in world affairs, with a focus on international security. Providing incisive interpretations of key trends, rather than a comprehensive survey of pertinent events, *Strategic Trends* is targeted at a broad audience, ranging from policymakers to academics, the media, and the general public.

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We hope you will enjoy reading *Strategic Trends 2022*. Should you have any feedback, please do not hesitate to contact us at brian.carlson@sipo.gess.ethz.ch and oliver.thraenert@sipo.gess.ethz.ch.

With warm regards from Zurich,

Brian G. Carlson
Team Head, Global Security

Oliver Thränert
Head of Think Tank



Arms and Influence

Throughout its 13-year history, the Strategic Trends series has sought to identify and analyze major trends that are shaping the landscape of international security. In some cases, however, events simply overtake such efforts and upend our plans. This year's edition is a case in point. On February 24, 2022, Russia launched a massive invasion of Ukraine, an act that promised to have major implications for European security as well as worldwide repercussions. In December 2021, just over two months before the invasion, Russia issued two documents calling for wholesale revisions to the European security order. The invasion also occurred less than three weeks after China and Russia, two authoritarian powers that have worked increasingly closely in recent years to challenge the existing international order, issued a joint declaration stating that their partnership had “no limits.”

These events coincided with the planning of Strategic Trends 2022 and the drafting of five planned chapters for this volume. Following the invasion, when our work was already well advanced, we were forced to change our plans significantly. One casualty was a chapter that intended to address NATO's efforts to adapt itself for the coming period of competition with Russia and China. Following the invasion, it became clear that it would be impossible to publish this chapter, as it would have been instantly outdated in the new and rapidly changing context.

Of the four remaining chapters that appear in this volume, two required significant revisions following the Russian invasion. One is a chapter on China-Russia relations and Asian security. Despite this chapter's focus on Asia, the Russian assault on Ukraine forced a reconsideration of the overall China-Russia relationship, which will be put to a severe test in the months and years ahead as China decides whether to reinforce its partnership with Russia or to distance itself from an erratic partner that has become an international pariah.



Another chapter focusing on transatlantic relations and nuclear arms control underwent a wholesale revision to account for the dramatically changed context following the Russian invasion. The prospects for nuclear arms control, which were already highly uncertain because of intensifying great-power competition and the development of new and emerging technologies that could prove destabilizing, are now even bleaker than before. The two remaining chapters, one assessing hypersonic weapons and the other analyzing the evolution of the Indo-Pacific concept, required less revision than the other two. However, the chapter on hypersonic weapons now addresses Russia's claims that it fired such weapons into Ukraine this March, which would mark the first time that Russia has used them.

Last year's edition of *Strategic Trends* offered hints of what was to come. The introduction noted the simultaneous Chinese pressure campaign against Taiwan and Russian buildup of forces along Ukraine's border during the spring of 2021. It also drew attention to Russia's determination to assert its interests along its western periphery and the security challenges that this posed for Europe, observing that "Russia may perceive a window of opportunity to act, given that the Biden administration is not settled in yet and European countries are struggling with the aftermath of the pandemic." Nevertheless, like most analysts, we did not anticipate that Russia would launch a full-scale invasion of Ukraine less than one year later.

The chapters in this year's volume attempt to address important trends in world politics at a time of rapid change and high levels of uncertainty. The authors have covered events up to April 1, fully aware that the situation could change considerably by the time of this volume's planned publication in May. Nevertheless, the four chapters cover important strategic trends that will shape international security in the years ahead regardless of the outcome of Russia's war in Ukraine. Together, they address issues of arms and influence, which is the theme of this year's edition.

The strategic calculations that Thomas Schelling outlined with terrifying clarity in his 1966 book of that title are now once again at the center of world attention, as Western policymakers grapple with Russian President Vladimir Putin's nuclear threats and the dangers of escalation. The two chapters dealing primarily with arms address such issues from different angles. One analyzes both the



potential and the limitations of hypersonic weapons. The other outlines the prospects for nuclear arms control to achieve its two historic goals, namely to stabilize deterrence and to achieve disarmament, in an increasingly uncertain international environment. The two chapters dealing primarily with influence address the China-Russia relationship and the Indo-Pacific regions, which could form the basis for competing alignments in the emerging international order. Both chapters focus on Asia, but they also assess the implications for Europe.

In the first chapter, **Brian G. Carlson** analyzes China-Russia relations and the impact on Asian security. In a follow-up to last year's chapter assessing the impact of this relationship on transatlantic security, he describes the expansion of bilateral defense cooperation, especially in the Asia-Pacific region. He argues that if the close China-Russia relationship of recent years persists in the aftermath of Russia's war in Ukraine, then China could eventually call upon Russia for direct military support in future scenarios of armed conflict, particularly in Northeast Asia.

In the second chapter, **Dominika Kunertova** explains how hypersonic technology has become a political tool in great-power competition among the United States, China, and Russia. She argues that the hype about hypersonic weapon programs not only obscures our understanding of the hypersonic military capability, but also ignores the increasing variety of missile threats.

In the third chapter, **Névine Schepers** argues that Russia's war in Ukraine significantly complicates nuclear arms control efforts while also underlining their necessity given heightened risks of nuclear escalation. Continued transatlantic unity is necessary to push for nuclear risk reduction measures and to address conflicting trends toward strengthening deterrence and supporting disarmament objectives.

In the fourth and final chapter, **Boas Lieberherr** and **Linda Maduz** analyze the emerging concept of the Indo-Pacific, in particular with regard to its strategic implications. They highlight four overarching trends associated with the new framework: a shift from an economy- to a security-dominated agenda, bottom-up to top-down regionalism, multilateralism to minilateralism, and including to excluding China.

CHAPTER 1

China-Russia Relations and Asian Security

Brian G. Carlson

China and Russia continued to draw closer together in the run-up to Russia's invasion of Ukraine. If their partnership remains strong in the war's aftermath, then the implications are likely to be far-reaching, including for Asian security. Competition between rival blocs could define the international system. US and allied concerns about a two-front war would continue to grow. In Asia, where China and Russia have expanded their bilateral defense cooperation, China might someday call on Russia for direct military support in an armed conflict.



Chinese and Russian Navy soldiers take part in a Chinese-Russian joint naval exercise in Qingdao, Shandong province, China, in April 2019. *Stringer/Reuters*



Russia's war in Ukraine not only poses a threat to European security, but also demonstrates the broader risks to international security arising from the close partnership that China and Russia have built in recent years. This partnership helped to make Russia's invasion of Ukraine possible and now figures prominently in the strategic calculations underlying the West's response. China and Russia presented a united front to the world in early February, less than three weeks before the invasion, when Russian President Vladimir Putin and Chinese President Xi Jinping met at the opening ceremony of the Winter Olympics in Beijing. Their joint declaration made no mention of Ukraine, but it proclaimed that their countries' friendship had "no limits." This assertion will be put to the test in the coming period. If China and Russia maintain their close partnership throughout the war and in its aftermath, then the formation of rival blocs could become a defining feature of the emerging international order.

Such an outcome would have profound implications for security in both Europe and Asia. One chapter in last year's edition of *Strategic Trends* examined the impact of the growing China-Russia partnership on Europe and transatlantic security.¹ The present chapter serves as a companion, turning its attention to Asia. The first section

offers a preliminary assessment of the impact of Russia's war in Ukraine on the China-Russia relationship. The remainder of the chapter focuses on the implications of this relationship for Asian security. The analysis considers Asia broadly, covering a wide swath of territory in an arc that begins in Northeast Asia and extends through Southeast Asia, South Asia, and Central Asia. In each of these regions, scenarios of armed conflict are conceivable. To varying degrees, coordination between China and Russia could be an important factor in each. China and Russia have steadily increased their bilateral defense cooperation in recent years, particularly in the Western Pacific, raising the specter of coordinated military action in the region.

Russia is likely to remain mired in Ukraine for the immediate future, limiting its ability to influence Asian security affairs. At the time of this writing in mid-April, the war's outcome remained highly uncertain. Facing military setbacks and stringent international sanctions, Russia was likely to become increasingly dependent on China for diplomatic and economic support, regardless of the war's outcome. Even if Russia ultimately manages to achieve some of its objectives in Ukraine, its hopes for postwar economic recovery, and thus for the reconstruction of its battered



military forces, depend on support from China. As the price of its continued support, China might someday demand that Russia provide direct military assistance in the event of an armed conflict in Asia.

Reverberations from Ukraine

The close relationship that Russia has built with China in recent years played an important role in enabling Putin's invasion of Ukraine. Putin recognized that a secure eastern flank was a prerequisite for his efforts to pursue revisionist aims in Europe.² Russia's partnership with China reassures Putin and his top advisers that China currently poses no military threat to Russia's eastern regions, freeing them to focus on their objectives along Russia's western periphery. Putin's confidence in China's goodwill was on display in the weeks leading up to the invasion, when the Russian military moved large numbers of troops from the country's eastern regions to positions in western Russia and Belarus along Ukraine's borders.

Putin also benefits from the knowledge that Russia's partnership with China raises the specter of a two-front war in Europe and Asia. Any potential military intervention by the United States and its NATO allies against Russia in an armed conflict in Europe could significantly increase the difficulty of

mounting an effective US response to simultaneous Chinese aggression in Asia. Allied leaders ruled out a military intervention in Ukraine, which is not a NATO member. However, concerns about a two-front war would become urgent if the war in Ukraine were to expand into a wider European war, or if Putin were to follow his invasion of Ukraine with further aggression against the Baltic countries or other NATO member states.

This situation also has major implications for Asian security, which is the focus of this chapter. Russian military operations in Europe, as well as in the Middle East, potentially distract US attention from Asia and provide China with additional room for maneuver. Russia's invasion of Ukraine raised fears that China could seize an opportunity, either now or in some future instance of Russian aggression in Europe, to attack Taiwan. Twice during 2021, first during the spring and then again during the fall, Russian military buildups along Ukraine's borders coincided with an increased tempo of incursions by Chinese warplanes into airspace near Taiwan's coastline.

China and Russia have intensified their strategic coordination in recent years, leveraging their close relationship to exert growing influence in



international politics. The Putin-Xi summit in Beijing was a new milestone. On February 4, the two leaders issued a joint declaration in which they stated that “friendship between the two states has no limits,” and “there are no forbidden zones in cooperation.” They also declared their opposition to the further expansion of NATO, the formation of competing blocs in the Asia-Pacific region, the pursuit of the US Indo-Pacific Strategy, and the establishment of the Australia-US-UK (AUKUS) defense partnership. In this same declaration, Russia also expressed its support for China’s position on Taiwan.³ China offered no official endorsement of impending Russian military action against Ukraine, and Chinese leaders may not even have been fully aware of Russia’s plans for a large-scale invasion.⁴ Nevertheless, the summit allowed Putin and Xi to stand united in their efforts to revise the international order and to curtail the power of the United States.

Following the Russian invasion on February 24, the China-Russia relationship became an important part of the war’s strategic equation, both for the direct combatants and for other interested actors. According to some news reports citing US officials, Russia requested military equipment and economic assistance from China in the early days following the invasion,

though Russia and China both denied this.⁵ US officials warned China that it would face serious consequences for any support that it offered to Russia. For its part, Ukraine called on China to apply pressure on Russia to end the war.

China now faces urgent questions about its strategic orientation, especially the extent to which it should continue to support Russia.⁶ It could distance itself from Russia, which now stands exposed as a reckless gambler and an international pariah, or reaffirm its support for Russia as a valuable partner in challenging the international order. In the weeks following the invasion, China sought to maintain a balanced approach. On the one hand, China expressed sympathy for Russia’s argument that the West provoked the crisis by ignoring Russia’s “legitimate security concerns,” particularly through NATO expansion. China also refrained from condemning Russia’s aggression, which it declined to call an “invasion.”

On the other hand, China had serious reservations about Russia’s actions, which clearly violated core principles of Chinese foreign policy such as state sovereignty and territorial integrity. If perceived to be too supportive of Russia, China could face some of the same international hostility that



Russia encountered following the invasion. China remained cautious about providing Russia with weapons, helping Russia to evade sanctions, or taking other actions that could subject China to punitive measures by the United States and its allies. When the UN Security Council and General Assembly held votes to condemn Russia's actions, China abstained. China appeared reluctant to pay heavy costs to support Russia, but neither was it eager to heed US calls to rein in Russia and compel it to end the war. An outright Russian defeat, which could topple Putin's regime and usher in a new, less China-friendly Russian government, was an outcome that Chinese leaders sought to avoid. China saw little interest in helping the United States, its principal rival, oppose China's own close partner. Despite the risks, therefore, China appeared unlikely to cast Russia aside.

The China-Russia relationship also affected US and Western calculations. One common view was that transatlantic unity in opposing Russia's aggression in Ukraine was essential not only for its own sake, but also as part of the effort to resist China's ambitions.⁷ Some policymakers and strategists in the West saw the war as an opportunity to weaken Russia and in the process deliver a warning to China against invading Taiwan or otherwise

challenging the United States militarily. Such an effort might also cause China to reevaluate its relationship with Russia.⁸ By sufficiently arming the Ukrainians, in this view, the West could achieve such a multifaceted strategic success.⁹

At the same time, Western leaders remained wary of escalation. They sought to avoid steps that could provoke a direct confrontation between Russia and NATO, which risked a major war and the possible Russian use of nuclear weapons. A wider European war also had the potential to stimulate military conflict in other theaters, including the Middle East and Asia. A Chinese attack on Taiwan was one such concern. However, Russia's military failures in Ukraine could serve as a cautionary example for Chinese leaders that might restrain them from mounting such an effort in the near future.

Even if the world avoids the most dangerous scenarios of escalation, the long-term prospects for international order could still be dire. Diplomacy could become increasingly rigid, raising the difficulty of resolving international disputes. The US-China rivalry continues to intensify. If the China-Russia partnership remains intact following the war in Ukraine, albeit with Russia weakened and clearly



relegated to the status of junior partner, then the world could witness the consolidation of rival blocs: one centering on the United States and its allies and partners, and the other on China, with Russia as its most important partner.

China and Russia remain unlikely to form a military alliance entailing formal security commitments, but their shared antagonism toward the West could strengthen their cooperation within an entente, quasi-alliance, or other less formal bloc. The closer their cooperation, the greater the risk that one of them might drag the other into its own dispute. If Russian escalation in Europe were to cause the outbreak of World War III, then China would have difficulty remaining uninvolved.¹⁰ Alternatively, Russia could feel compelled, for the sake of its indispensable partnership with China, to offer military assistance to China in some future armed conflict in Asia. The recent increase in China-Russia defense cooperation in Asia suggests that planning for such scenarios could already be under way.

China-Russia Relations and Asia

The close relationship that China and Russia enjoy at present, including in Asia, reflects the profound geopolitical changes that have occurred in the region over the past few decades. During the Cold War, the Sino-Soviet

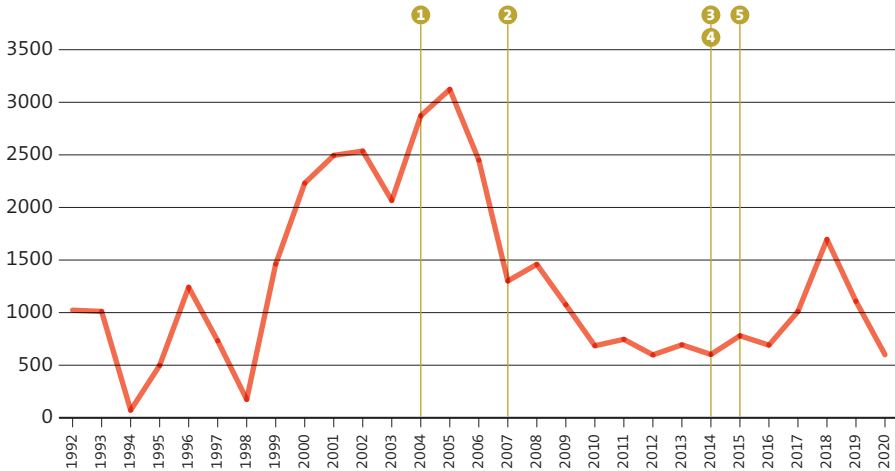
split reached such levels of antagonism that the two countries fought border clashes in 1969. The normalization of Sino-Soviet relations in 1989 laid the groundwork for steadily improving relations between China and Russia in the post-Soviet era. During the 1990s, Russia's relations with the West steadily deteriorated, most notably over Russian opposition to NATO expansion. At the same time, US-China relations also soured as a result of disagreements over Taiwan, human rights, and other issues. Shared discontent with the United States and the US-led international order created a convergence of interests between China and Russia, which formed a "strategic partnership" in 1996.

China and Russia, along with three Central Asian countries, concluded important agreements on military confidence-building measures (1996) and the reduction of military forces (1997) in their border regions. These agreements laid the groundwork for the Shanghai Five, which became the Shanghai Cooperation Organization (SCO) in 2001. That same year, China and Russia signed the Treaty of Good-Neighborliness and Friendly Cooperation, establishing the legal basis for their bilateral relationship. By 2008, the two countries had fully resolved their longstanding border dispute. Russia became China's



Russian Arms Sales to China

SIPRI Trend Indicator Values (TIVs) (in millions)



- 1 2004: China cancels contract for licensed production of 200 Russian Su-27SK fighter jets after completing 95
- 2 2007: China unveils J-11B fighter jet, an unlicensed copy of Su-27SK
- 3 2014: Russia annexes Crimea
- 4 2014: Russia agrees to sell S-400 air defense system to China
- 5 2015: Russia agrees to sell Su-35 fighter jets to China

Note: The SIPRI TIV is a calculated value to measure trends in international arms flows over periods of time. It is based on the known unit production costs of a core set of weapons and is intended to represent the transfer of military resources rather than the financial value of the transfer. Therefore the figures do not represent sales prices for arms transfers.

Source: SIPRI Arms Transfers Database

largest foreign arms supplier, and the two countries conducted joint military exercises beginning in 2005. A series of joint naval exercises followed, starting in 2012.

Despite this steady progress in relations, misgivings persisted. Russian arms sales to China peaked in 2005 but declined sharply for several years

thereafter. Russian concerns about Chinese copying of Russian technology were one factor. China's production of the J-11B fighter jet, an unlicensed copy of the Russian Su-27SK, was one prominent example.¹¹ China's demand for imported Russian weapons also declined as a result of advancements in its own domestic defense industry.



Russian officials were also concerned about China's growing military capabilities, especially in light of the post-Soviet collapse of Russian military power and the potential vulnerability of Russia's eastern regions. In 2009, China conducted large-scale military exercises that some Russian analysts viewed as a dress rehearsal for an invasion of Russia. The following year, during the Vostok-2010 domestic military exercises in the Russian Far East, Russian military forces appeared to simulate a tactical nuclear strike against invading Chinese forces. Russia's 2010 Military Doctrine hinted that the defense of Siberia and the Russian Far East against a potential Chinese invasion depended on nuclear deterrence. In 2013, following the conclusion of China-Russia joint naval exercises, five participating Chinese ships sailed into the Sea of Okhotsk. This prompted Russian President Vladimir Putin to call snap military exercises in the Russian Far East, which he flew to the region to oversee personally. Russia announced a "turn to the East" that aimed to diversify relations with Asian countries while avoiding excessive dependence on China. Thus, on the eve of the 2014 Ukraine crisis, Russian apprehensions about China remained palpable.

The imposition of Western sanctions on Russia following its annexation of Crimea in March 2014 and subsequent

support for insurgents in eastern Ukraine proved an important turning point in Russia's relations with China. Russia soon agreed to sell the S-400 air defense system and Su-35 fighter jets to China. As discussed in the next section, joint military exercises and other forms of defense cooperation intensified following the onset of the Ukraine crisis. The strengthening of the China-Russia relationship was also apparent in Russia's quadrennial Vostok military exercises. Russia invited Chinese forces to participate in Vostok-2018, signaling that it no longer viewed China as a military threat.

Chinese and Russian interests in Asia are not in obvious alignment. China, in the view of many analysts, is a revisionist power that seeks regional dominance and the eventual displacement of the US-led international order.¹² These ambitions require the eventual expulsion of US military forces from Asia and the acceptance by other states in the region of China's paramount position. Russia, by contrast, is essentially a status quo power in Asia that seeks to hold onto its remaining regional power, which is already much diminished from Soviet times. Russia's efforts to exert influence in the region suffer from the weakness of Siberia and the Russian Far East, which remain underpopulated and underdeveloped.



The Russian Pacific Fleet is a shadow of its Soviet forerunner. Under these circumstances, Russia arguably has a strong incentive to diversify its Asian diplomacy and avoid excessive dependence on China. Russia's interests in Asia are also potentially compatible with those of the United States. The US military presence provides stability in the region and serves as a check on China's ambitions, both of which are arguably in Russia's interests.

In recent years, however, events have not followed this script. During the decade following its inception, Russia's "turn to the East" became largely a pivot to China and lost its emphasis on other Asian countries.¹³ Russia has become increasingly supportive of China's positions on a range of issues, perhaps based partly on the expectation that China would reciprocate. One motivation for Russian arms sales to China appears to be a desire to strengthen China's ability to wage war against US-led coalitions in the Asia-Pacific region. Thus, Russian arms sales have strengthened China's air, naval, anti-ship, and air defense capabilities, which would benefit China in the sort of maritime contingencies most likely to arise in conflict against US-led coalitions in the region, rather than contributing to a buildup of China's ground forces, which might be used in a potential land invasion of Russia.

This outcome shifts US attention and military resources to Asia, potentially affording Russia some additional room for maneuver in Europe. US defense planners recognize that involvement in a major armed conflict in Europe could leave the United States exposed in Asia. China and Russia have also steadily expanded bilateral defense cooperation, including in Asia.

China-Russia Defense Cooperation and Asia

China and Russia have refrained from establishing a formal alliance, partly because both countries have wished to avoid becoming entangled in the other's regional disputes. China declined to endorse Russia's recognition of the sovereignty of two breakaway regions in Georgia in 2008, its annexation of Crimea in 2014, or its recognition of the sovereignty of the Donetsk and Luhansk regions in the Donbas just before the February invasion. For its part, Russia officially maintains neutrality on China's territorial disputes in the South China Sea and the East China Sea. The 2001 treaty lacks a mutual defense clause, the crucial feature of an alliance. However, the treaty obligates both countries to engage in mutual consultations in the event that either faces a threat to its security and to avoid joining alliances directed against the other. The two countries recently extended this treaty



for another five years without formally upgrading their security relationship.

On the basis of this relationship, China and Russia have steadily expanded defense cooperation, which features arms sales, joint military and naval exercises, and defense consultations. Russian arms sales to China have made significant contributions to China's military capabilities. For example, the S-400 air defense system allows China to contest significant portions of the airspace near Taiwan and the Senkaku Islands. Together with the Su-35 fighter jets, this allows China to challenge US air superiority in regions that could become the scenes of armed conflict.¹⁴ By conducting joint military and naval exercises, China and Russia increase the interoperability of their armed forces, thus making progress toward an eventual ability to conduct joint operations. Such exercises also demonstrate both countries' commitment to the other's security interests and the importance of military cooperation in their relationship.¹⁵

China and Russia have steadily expanded joint naval exercises and other activities in the seas and airspace of Asia. The two countries' first joint military exercises, which were called Peace Mission 2005 and held in August 2005, featured a naval component in waters near China's Shandong

Peninsula that appeared to simulate a Taiwan contingency. In 2012, the two countries initiated a series of annual joint naval exercises, which Russia calls Naval Interaction and China calls Joint Sea. This series has featured naval drills in a variety of Asian waters, including the Yellow Sea, the Sea of Japan, the East China Sea, the South China Sea, and the Sea of Okhotsk. The Maritime Interaction-2021 naval exercises, which the two countries held in the Sea of Japan in October 2021, featured five surface warships from each country, two Russian submarines, and a Chinese submarine.

Joint naval exercises serve important purposes of political signaling for China and Russia. In several cases, their naval drills in the Western Pacific appeared to signal either defiance toward the US-South Korea alliance or Russian diplomatic support for, though not outright endorsement of, China's claims in the East China Sea.¹⁶ China offered its own support to Russia by participating in joint naval exercises in the Mediterranean Sea in 2015. The Chinese ships entered the Black Sea, though they avoided Crimea, which Russia had annexed the previous year. Perhaps to return the favor, Russia participated in joint naval exercises with China in the South China Sea in 2016.



The following year, China once again reciprocated by joining Russia in joint naval exercises in the Baltic Sea. Beyond demonstrating support for Russia through participation in these exercises, China may also have intended to signal its displeasure with British and French naval activities in the Western Pacific, especially in the South China Sea.¹⁷ China and Russia have also held joint naval exercises with Iran three times since 2019.

China and Russia added a new component to bilateral defense cooperation in 2019, when they began conducting joint air patrols in the Western Pacific. The first joint air patrol, which the two countries conducted in July of that year, featured long-range strategic bombers and other aircraft on both sides. During the joint air patrol, the Russian and Chinese aircraft crossed into the air defense identification zones (ADIZ) of both South Korea and Japan in the East China Sea, prompting both countries to scramble fighter jets in response. A Russian airborne warning and control aircraft also flew close to the disputed Dokdo/Takeshima islets, which are controlled by South Korea but also claimed by Japan, and thereby entered airspace that both countries consider to be their own. The South Korean air force fired warning shots at the Russian aircraft, prompting criticism by Japan.¹⁸ The

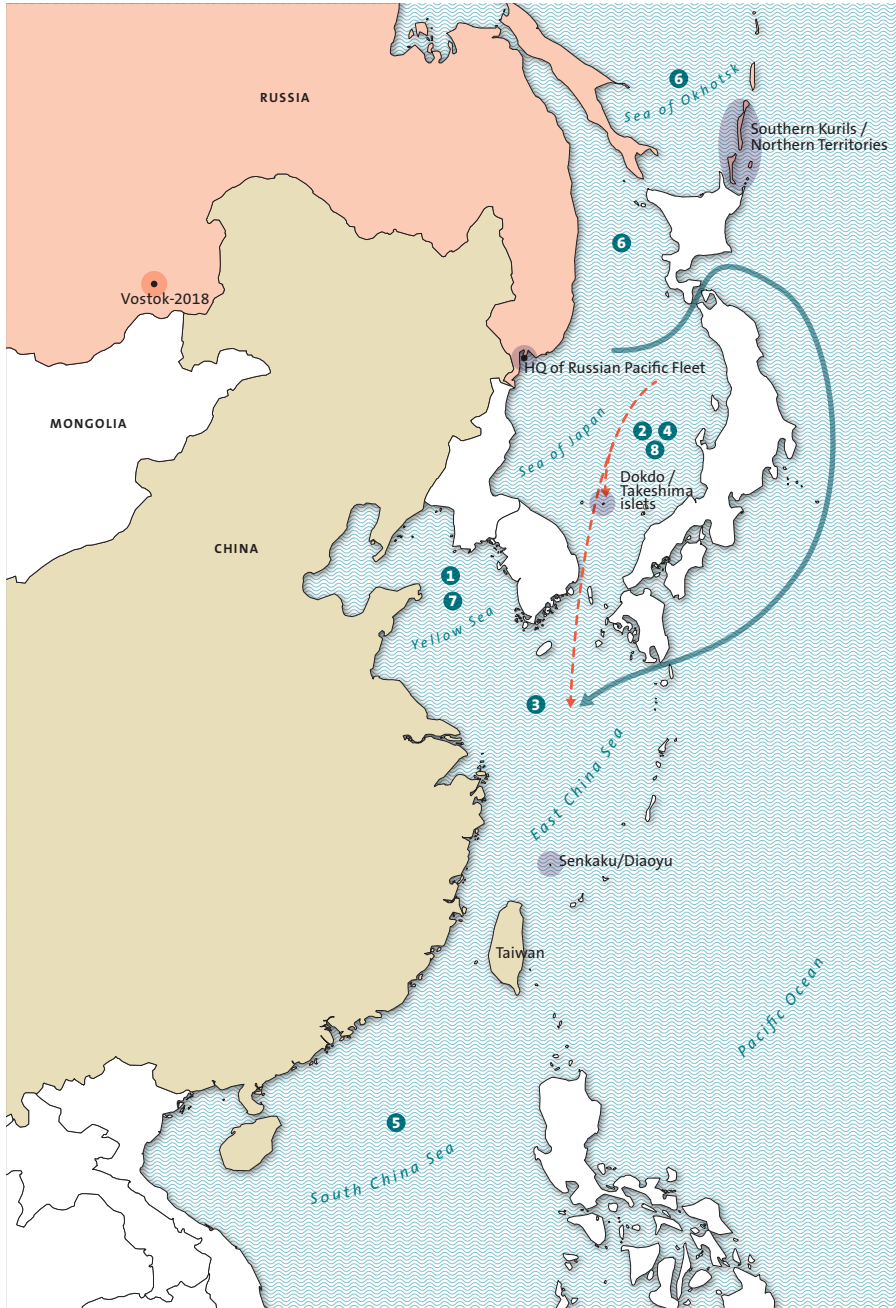
location of the air patrol suggested that it may have been intended, at least in part, to drive a wedge between South Korea and Japan. Similar joint air patrols occurred in December 2020 and November 2021.

In October 2021, China and Russia conducted their first joint ship patrol. At the conclusion of the Maritime Interaction-2021 joint naval exercises in the Sea of Japan, the five participating surface vessels from each country circumnavigated Japan by sailing first through the Tsugaru Strait into the Pacific Ocean, then through the Osumi Strait into the East China Sea. China and Russia may have intended not only to send a message to Japan, but also to signal their displeasure with the recent increase in naval cooperation among the United States and its allies and partners from around the world in nearby waters. This naval cooperation has featured a series of exercises in the Western Pacific, including one in early October, just days before the China-Russia joint ship patrol. In this exercise, navies from the United States, the United Kingdom, Japan, the Netherlands, Canada, and New Zealand conducted maneuvers in waters to the southeast of Okinawa. China and Russia may also have used the joint ship patrol to express their opposition to the previous month's announcement of the



China-Russia Joint Military Activities in the Asia-Pacific

| <i>Activity</i> | <i>Location</i> | <i>Forces</i> |
|---|--|--|
| Joint naval exercises | | |
| 1 Naval Interaction (Joint Sea) 2012 (April 22–27) | Yellow Sea | China: 18 warships (including 2 submarines), 13 aircraft, 5 helicopters Russia: 7 warships, 4 helicopters |
| 2 Naval Interaction (Joint Sea) 2013 (July 5–13) | Sea of Japan | China: 9 warships (including 2 submarines), 3 helicopters Russia: 13 warships (including submarine), 3 aircraft, 2 helicopters |
| 3 Naval Interaction (Joint Sea) 2014 (May 20–26) | East China Sea | China: 8 warships (including 2 submarines), 7 aircraft, 4 helicopters Russia: 6 warships, 2 aircraft |
| 4 Naval Interaction (Joint Sea) 2015 (Phase I: May 11–12; Phase II: August 20–28) | Phase I: Mediterranean Sea Phase II: Sea of Japan | Phase II: China: 7 warships, 5 aircraft, 6 helicopters, 21 amphibious vehicles Russia: 18 warships (including 2 submarines), 3 aircraft, 9 amphibious vehicles |
| 5 Naval Interaction (Joint Sea) 2016 (September 12–19) | South China Sea | China: 12 warships (including 2 submarines), 11 aircraft, 8 helicopters Russia: 5 warships, 2 helicopters, amphibious vehicles |
| 6 Naval Interaction (Joint Sea) 2017 (Phase I: July 21–28; Phase II: September 22–26) | Phase I: Baltic Sea Phase II: Sea of Japan and Sea of Okhotsk | Phase II: A total of 13 warships (including 2 submarines), 4 on-board helicopters, and 4 submarine combat aircraft |
| 7 Naval Interaction (Joint Sea) 2019 (April 29 – May 4) | Yellow Sea | China: 7 warships (including submarine) Russia: 5 warships (including submarine) |
| 8 Naval Interaction (Joint Sea) 2021 (October 14–17) | Sea of Japan | China: 5 warships, 1 submarine Russia: 5 warships, 2 submarines |
| Joint air patrols | | |
| -> Joint Aerial Strategic Patrol 2019 (July 23) | Sea of Japan and East China Sea | Russia: 2 Tu-95 strategic bombers China: 2 H-6K strategic bombers |
| -> Joint Aerial Strategic Patrol 2020 (December 22) | Sea of Japan and East China Sea | Russia: 2 Tu-95 strategic bombers China: 4 H-6K strategic bombers |
| -> Joint Aerial Strategic Patrol 2021 (November 19) | Sea of Japan and East China Sea | Russia: 2 Tu-95 strategic bombers China: 2 H-6K strategic bombers |
| Joint ship patrol | | |
| -> Joint ship patrol at conclusion of Naval Interaction-2021 | Circumnavigation of Japan | Russia: 5 warships China: 5 warships |



Sources: Richard Weitz, "Assessing Chinese-Russian Military Exercises: Past Progress and Future Trends," Center for Strategic and International Studies, July 2021; Michael Paul, "Partnership on the High Seas: China and Russia's Joint Naval Manoeuvres," SWP Comment 26 (June 2019); Janes; Reuters; TASS; The Diplomat.



AUKUS partnership, which will allow Australia to acquire nuclear submarines using US and UK technology.¹⁹

China and Russia have also cooperated to ensure the credibility of their nuclear deterrents in relation to the United States.²⁰ They condemned the development of US military systems that they perceived as threatening to erode their deterrents, including missile defense and high-precision conventional weapons. The two countries jointly criticized US plans for missile defense, including the deployment of Terminal High-Altitude Area Defense (THAAD) and Aegis Ashore air and missile defense systems. China and Russia conducted their own joint missile defense exercises in the form of computer simulations in 2016 and 2017. In 2019, Putin revealed that Russia was helping China to build a missile attack early warning system. Russia has resisted US calls for China to join multilateral arms control negotiations. Following the demise of the Intermediate-Range Nuclear Forces (INF) Treaty, Russia joined China in calling on the United States to refrain from deploying intermediate-range missiles in either Europe or Asia.²¹ China reportedly decided to accelerate its nuclear buildup, which was already under way, after observing the effectiveness of Russia's nuclear threats in deterring NATO intervention in Ukraine.²²

The steady increase in China-Russia defense cooperation raises questions about whether the two countries might engage in coordinated military action under certain scenarios of armed conflict in Asia. As the rivalry between the United States and China intensifies, the outbreak of armed conflict between the two countries becomes increasingly likely.²³ Moreover, the challenges that US-led coalitions would face in achieving victory have grown increasingly daunting in just the past few years.²⁴ Russia's intervention in such disputes would further complicate matters. To be sure, considerable skepticism is still in order regarding the likelihood of Russian intervention. China and Russia have no formal treaty obligations to come to each other's assistance in such scenarios, nor have they publicly announced the development of joint operational plans. Indeed, China and Russia appear to lack the capability to conduct true joint military operations at present. The Chinese and Russian militaries lag behind the United States and its allies in the sophistication of their joint military and naval exercises and in their level of interoperability.²⁵

Nevertheless, based on recent trends in China-Russia diplomatic relations and defense cooperation, the likelihood is growing that the two countries might coordinate their actions



closely during potential crises in Asia. Joint military operations remain unlikely, but the two countries might conduct military operations in separate sectors in the pursuit of common objectives.²⁶ The following sections examine such possibilities in the major regions of Asia.

Northeast Asia and Taiwan

Northeast Asia has been the geographical focus of much recent China-Russia diplomatic and defense cooperation. The two countries have coordinated their positions in the region closely, aiming to influence the course of events on the Korean Peninsula, assert their interests in the North Korean nuclear crisis, apply pressure on Japan through joint air and ship patrols, discourage defense cooperation between Japan and South Korea, prevent the deployment of US missile defense systems and intermediate-range missiles, weaken US extended nuclear deterrence, and reduce the overall US military footprint in the region. Northeast Asia is the region in which China and Russia would be most likely to conduct coordinated military action in a great-power war. This situation also has implications for a potential military conflict over Taiwan.

In recent years, China and Russia have closely coordinated their policies toward the Korean Peninsula.²⁷ In 2016,

the United States and South Korea announced their intention to deploy the THAAD system on South Korean territory in order to defend South Korea and US military bases in the region from North Korean missile attacks. China and Russia strongly objected to this deployment, lodging their complaints in a letter to the UN Security Council. This letter also criticized US plans for the deployment of Aegis Ashore systems in the region, as well as US development of high-precision conventional weapons.²⁸ China claimed that the monitoring range of the THAAD system's X-band radar would reach deep into Chinese territory, threatening its second-strike capability. Russia, which boasts a much larger nuclear arsenal than China, recognized that THAAD posed no threat to the Russian nuclear deterrent. However, Russia professed concern that the deployment could become part of a global network of US missile defense systems that could eventually threaten its deterrent capacity. The THAAD deployment in South Korea went forward as planned, but South Korea, facing Chinese pressure, agreed not to allow any further deployments of the system on its territory.

China and Russia also cooperated in addressing the crisis over North Korea's nuclear and ballistic missile



programs. As tensions rose in 2017, the two countries issued a joint declaration offering a roadmap for resolving the crisis. Their proposal combined China's call for a "dual freeze," meaning a simultaneous moratorium on North Korean nuclear and ballistic missile tests and a suspension of US-South Korea military exercises, with Russia's plan for a phased resolution of the crisis based on reciprocal concessions. That fall, China and Russia supported the imposition of UN Security Council sanctions on North Korea, but only after blocking harsher measures that the United States proposed, including a total oil embargo. Later, as US-North Korea diplomacy unfolded, China and Russia took satisfaction in the essential adoption of their proposal for a dual freeze, but they continued to insist on phased negotiations.²⁹

Throughout this period, coordination between China and Russia demonstrated that the paramount goals of both countries were to reduce the US military presence in Northeast Asia and to build a new regional security architecture. In particular, both countries sought to undermine the US-South Korea alliance. The increasing size and sophistication of US-South Korea joint military exercises served as a source of irritation and a likely impetus for the initiation of China-Russia joint naval exercises in 2012. That

year's exercises took place in the nearby waters of the Yellow Sea. As long as the United States maintains its existing military footprint in the region, China and Russia are willing to preserve the North Korean regime. Both countries support the denuclearization of the peninsula in principle, but they prefer the preservation of a nuclear-armed North Korea to the collapse of the regime and the establishment of a unified Korea as a US ally.

In the event of military conflict on the Korean Peninsula, a coordinated military intervention by China and Russia is a possibility that US and allied defense planners must consider. China, which has not fought a war since its incursion into Vietnam in 1979, might benefit from Russia's recent combat experience in Ukraine and Syria. China might also wish to bring Russia's powerful nuclear deterrent into play, along with its air defense and anti-ship systems, which might prevent US military forces from crossing the demilitarized zone into North Korea.³⁰ The long-term interests of Russia and China on the peninsula diverge, with Russia standing to gain from eventual reunification and China preferring division in order to maintain a buffer in the north. In the near term, however, the two countries' interests are largely in alignment, especially concerning their shared goal of limiting the US



security presence. Some Russian analysts argue that the Korean Peninsula is one of the regions in which China and Russia would be most likely to develop joint operational plans.³¹ Vostok-2018 may have been intended as a display of Chinese and Russian military power in Northeast Asia in advance of the possible outbreak of hostilities on the Korean Peninsula.³²

China and Russia have also increasingly coordinated their policies toward Japan. Aside from the United States, no other country faces more serious implications from a close China-Russia partnership. A China-Russia axis would force Japan to adopt a defense posture that prepares for the possibility of war on two fronts. This situation severely complicates Japan's defense planning, especially given the unlikelihood of significant increases in Japanese defense budgets and growing doubts about the reliability of the United States. Throughout the Cold War, Japan's defense strategy was based on ensuring the country's ability to respond to a threat from the Soviet Union to the north. For several years after the Soviet collapse, Japan maintained this posture in relation to Russia. Later, Japan's focus shifted to the threat of a North Korean missile attack. In recent years, Japan has increasingly focused on the threat posed by China's growing military power

and assertiveness, which have been manifest in China's declaration of an ADIZ and intensified maritime activities in the East China Sea. Now, just as concerns about China are becoming acute, the potential threat from Russia has reemerged.³³

Both China and Russia have territorial disputes with Japan. At the end of World War II, the Soviet Union seized four islands in the southern Kurils, which Japan calls the Northern Territories. For decades, Japan has unsuccessfully sought the return of all four islands. Japan, meanwhile, controls the Senkaku Islands in the East China Sea, which China also claims and calls the Diaoyu Islands. Russia has long resisted calls by China to form a united front against Japan on territorial issues, declining to endorse China's claims in the East China Sea. However, in recent years it has appeared to become increasingly sympathetic to China's views.³⁴ The joint naval exercises that the two countries conducted in the East China Sea in 2014, along with others held in nearby waters, underscored this trend.³⁵

In an effort to alleviate the strategic problems resulting from a close China-Russia partnership, former Japanese Prime Minister Shinzo Abe consistently pursued diplomatic outreach to Russia during his second stint



in office (2012–2020). In accordance with this objective, the sanctions that Japan imposed on Russia following its annexation of Crimea were less stringent than those of other G7 countries. At the same time, Abe promised his domestic audience that he would refrain from signing a peace treaty with Russia officially ending World War II until the two countries first resolved their territorial dispute.

Abe's efforts eventually reached a dead end, as the two countries failed to make progress on this issue during Putin's visit to Japan in December 2016. Russia's position on the southern Kurils has hardened, and recent changes to the Russian Constitution now prohibit their return. Abe also sought to reduce tensions with China, paying an official visit in 2018, the first by a Japanese prime minister in nearly seven years. In the face of continued tensions with both China and Russia, however, Japan remains dependent on its alliance with the United States. Abe worked assiduously to maintain the US commitment and also conducted diplomatic outreach to other US allies and partners in Asia, most notably through the Quadrilateral Security Dialogue, or Quad, which also includes the United States, India, and Australia. In contrast to 2014, Japan was quick to join US and European sanctions on Russia in 2022.

China and Russia have steadily increased military pressure on Japan. For years, the Japan Air Self-Defense Force (JASDF) has been forced to scramble fighter jets at an increasing rate in response to incursions by Russian and Chinese aircraft into the airspace near Japanese territory. In 2019, China and Russia coordinated these efforts through their first joint air patrol. The October 2021 joint ship patrol added an additional component to the military pressure on Japan. China and Russia also vowed to resist the deployment of US intermediate-range ballistic missiles on Japanese territory. Japan's decision in July 2020 to cancel the deployment of the US Aegis Ashore system on its territory, ostensibly for cost and environmental reasons, may encourage China and Russia to believe that Japan is susceptible to pressure on such issues.³⁶

In a crisis, Japan could face the nightmare scenario of a two-front war against both China and Russia.³⁷ Even if the Chinese and Russian militaries were unprepared to conduct joint operations, they might coordinate their operations in separate sectors. For example, if a military conflict were to break out as a result of maritime disputes between China and Japan in the East China Sea, then Russia might offer assistance to China by threatening Hokkaido and surrounding regions



of northern Japan.³⁸ Short of actual armed conflict, the mere threat of military action by Russia could weaken Japan's position in diplomatic disputes with China.

Such concerns also apply to potential military conflicts over Taiwan.³⁹ Russia firmly supports China's position on Taiwan, a shared understanding that the two countries enshrined in their 2001 treaty and reaffirmed in their February 2022 joint declaration. Concerns about a possible Chinese military assault on Taiwan are growing.⁴⁰ In October, Chinese warplanes flew into Taiwan's ADIZ for a record number of consecutive days. Japanese officials have repeatedly stated that they have a strong interest in the Taiwan issue and would not stand aside during a military conflict. Under such a scenario, China might count on Russia's assistance in tying down Japanese forces and preventing or complicating their intervention in the Taiwan Strait. Russia might allow China to use Russian airspace for air strikes on Japan.⁴¹ Russia might even consider launching its own military attacks on Japan or threatening US forces in the North Pacific in order to complicate efforts by the US-Japan alliance to provide military assistance to Taiwan.⁴² Such considerations might give Japan pause before engaging in military conflict with China.

Southeast Asia and the South China Sea

In recent years, China has acted with increasing assertiveness in advancing its claims in the South China Sea, where it is involved in maritime territorial disputes with several Southeast Asian countries. China presented a map with an infamous "nine-dashed line" purporting to show its rightful control of approximately 90 per cent of the sea, a claim that the Permanent Court of Arbitration in The Hague rejected in a July 2016 ruling. China has built artificial islands in the sea, several of which it has militarized. Russia, meanwhile, is a marginal actor in this region. Unlike in Northeast Asia and Central Asia, Russia has no territory adjacent to Southeast Asia. Nevertheless, it exerts some regional influence through arms exports, energy deals, membership in the East Asia Summit, and diplomatic relationships with countries in the region.

Russia's most important partner in the region is Vietnam, a link that serves as a potential irritant in the China-Russia relationship. China and Vietnam are longtime rivals that fought a brief war in 1979. They also have maritime territorial disputes in the South China Sea. In 2014, China sailed an oil rig into waters disputed by the two countries in an effort to assert its claims. China also objected



to joint oil exploration by Vietnam and Rosneft, the Russian national oil company, in waters that China claims. Under pressure from China, Rosneft eventually suspended its plans for offshore drilling off the coast of Vietnam. Russia has sold submarines and other advanced weapons to Vietnam, adding another source of irritation for China. In recent years, Russian warships gained access to the naval base at Cam Ranh Bay in Vietnam for servicing and repairs. Russia has expressed interest in establishing its own naval base there, though this remains unlikely. In a reflection of its desire to maintain close relations with Russia, Vietnam abstained from UN resolutions condemning Russia's invasion of Ukraine and called for a peaceful resolution without criticizing Russia.

Despite the friction that Russia's relationship with Vietnam could create, China and Russia have managed the situation relatively smoothly. Russian officials have offered several arguments to explain their position to China, above all that their country's relationship with Vietnam is not anti-Chinese in character. They argue that Russian influence in Vietnam is preferable to US influence in the country. For example, they maintain that Russian naval activities at Cam Ranh Bay are preferable to those of the United States, which Vietnam also allows.

Moreover, they argue that by cultivating this relationship, Russia can discourage Vietnam from drawing too close to the United States. To date, the Russia-Vietnam relationship has not prevented the steady deepening of Russia's relationship with China.

Russia officially maintains neutrality on China's claims in the South China Sea. However, it has offered support to China on South China Sea issues in important respects. Although Russia declines to support the substance of China's claims, it nevertheless supported China's rejection of the international court ruling, agreeing with China's position that the court had no lawful jurisdiction over the matter. In September 2016, just two months after the court ruling, Russia joined China in conducting joint naval exercises in the South China Sea.⁴³ Among other tactical operations, the exercises featured anti-submarine warfare drills. Ironically, one likely target of Chinese anti-submarine warfare is Vietnam, which has purchased six Kilo-class submarines from Russia.

For Russia, the attempt to strengthen relations with China while also building ties with Vietnam and other Southeast Asian countries is a difficult balancing act. Russia's increasing reliance on China for diplomatic and



economic support could eventually compel Russia to strengthen its support for China's claims in the South China Sea.⁴⁴ Russia would be unlikely to provide direct military assistance to China in an armed conflict in the region, at least in the actual theater of conflict. At a minimum, however, China might be able to prevent Russia from offering assistance to Vietnam or other countries in the region that are embroiled in disputes with China. Moreover, the concern expressed above that Russia might provide assistance to China by threatening Japan, either during a China-Japan clash in the East China Sea or amid an attempted Japanese intervention in support of Taiwan, also potentially applies to the South China Sea. As with Taiwan, Japan has expressed its interest in South China Sea issues and has left the door open for a potential military intervention in the region. China might welcome Russia's assistance in thwarting such an effort.

China and Russia have also conducted diplomatic outreach to countries in Southeast Asia, including US allies, in an effort to strengthen their own influence at the expense of the United States. Both countries responded positively to suggestions by Rodrigo Duterte, following his election as president of the Philippines, that his country should purchase weapons from China and Russia. They sought

to take advantage of political turmoil in Thailand, another US ally. China and Russia resisted Myanmar's deepening relations with the United States following the introduction of limited democratic reforms more than a decade ago, shielded the government from UN resolutions condemning the persecution of Rohingya Muslims, and offered diplomatic support following the coup and return to full military rule in early 2021.

South Asia

The China-India rivalry is likely to be a major factor in world politics during the coming decades. This growing rivalry has the potential to generate military conflict either on land, along the two countries' disputed Himalayan border, or at sea, particularly in the Indian Ocean. In June 2020, a violent clash broke out between the two countries' border forces in the Galwan Valley, high in the Himalayas. In addition to the risk of armed conflict, this rivalry also serves as a complicating factor in the China-Russia relationship.⁴⁵ Moscow has enjoyed close relations with Delhi dating back to the early days of the Cold War. Russia also remains a major arms supplier for India. Until just a few years ago, Russia consistently sold weapons to India of a technological level that it remained unwilling to sell to China.



In the years following the breakup of the Soviet Union, Russia became increasingly attracted to the idea of exploiting its longstanding relationship with India and its growing ties to China in order to exert influence in international politics through this trilateral relationship. The three countries interacted with increasing regularity in a variety of formats, including the Russia-India-China (RIC) grouping, BRICS, and eventually the SCO, which India joined alongside Pakistan in 2017. Russia's goal in these efforts was twofold. First, it sought to establish this triangle as a counterweight to a Western-dominated international order. Second, it sought to diversify its diplomatic relationships in Asia. For Russia, close relations with India served as a means of balancing, and avoiding excessive dependence on, its relationship with China. As in the case of its relationship with Vietnam, Russia appealed to China by arguing that close relations between Russia and India could help to prevent India from drawing too close to the United States.

Russia never achieved its lofty goals for the Russia-India-China triangle, however, and the June 2020 border clash dealt a major blow to its efforts. In the period leading up to the clash, China became increasingly concerned about the strengthening of US-India ties, particularly through the revival

of the Quad and the implementation of the US Indo-Pacific Strategy in 2017. China may have provoked the Galwan Valley incident in order to send India a warning against closer relations with the United States. The clash created an awkward situation for Russia, which sought to maintain close relations with both countries in the aftermath. However, Russian Foreign Minister Sergei Lavrov continued to criticize India for its role in the US Indo-Pacific Strategy. Indian officials protested that they were acting prudently to ensure their country's security in the face of Chinese provocations.

The Taliban takeover of Afghanistan in August 2021 further strained Russia-India ties.⁴⁶ India was a strong supporter of the previous, US-backed government in Kabul, which it viewed as a bulwark against Pakistan's efforts to establish Afghanistan as a strategic rear for its rivalry with India. In the years leading up to the US-backed government's collapse, Russia and China both engaged in diplomatic outreach to the Taliban, anticipating that they would need to cooperate with this movement in the increasingly likely event that it returned to power. Russia also made diplomatic overtures and sold weapons to Pakistan, China's "all-weather" ally. Russia's ties with Pakistan and



the Taliban were a source of irritation to India, potentially further straining ties with Russia.

Both Russia and India seek to maintain a strong bilateral relationship. India's unwillingness to criticize Russia for its invasion of Ukraine reflects both its continued reliance on Russian weapons and technical assistance and its desire to prevent Russia from drawing too close to China. In the weeks following the invasion, both Lavrov and Chinese Foreign Minister Wang Yi visited India, perhaps sensing an opportunity to draw India away from closer cooperation with the United States and its allies.

Despite the desire of both Russia and India to maintain strong ties, events are conspiring to push them into competing diplomatic alignments. As the China-India rivalry continues to intensify, India appears ever more likely to draw close to the United States and its other partners in the Quad, weakening the India-Russia relationship.⁴⁷ As Russia grows increasingly dependent on China, its relations with India are likely to come under further strain. Indian officials recognize that in the event of war with China, they cannot count on support from Russia. China, which increasingly has the upper hand in its relationship with Russia, might have the power to block Russian

assistance to India. From India's perspective, only the United States and its democratic allies are likely to prove reliable in a crisis.⁴⁸

Central Asia

Throughout the post-Soviet period, as China-Russia relations have grown steadily closer, Central Asia has loomed as a potential source of tension in the relationship. The breakup of the Soviet Union and the establishment of five new independent states in post-Soviet Central Asia opened the door to the expansion of China's regional influence. China and Russia worked together to alleviate such concerns. The main purpose of the SCO was to combat the "three evils" of terrorism, separatism, and extremism. China and Russia also shared the goal of limiting US influence in the region. Following the 2001 terrorist attacks in New York and Washington, Russia and China initially accepted the presence of US military bases in Central Asia to support operations in Afghanistan. By 2005, however, they joined the other SCO members in calling for a timetable for the withdrawal of US bases from the region.

Meanwhile, China made steady progress in expanding its regional influence. China secured the construction of the Kazakhstan-China oil pipeline and the Turkmenistan-China gas



pipeline, dashing Russian aspirations to maintain control of the region's energy exports. China's ambitions for regional influence appeared to intensify starting in 2013, when Xi delivered a speech in Kazakhstan announcing plans for the Silk Road Economic Belt (SREB), the continental component of what eventually became known as the Belt and Road Initiative (BRI). Through this initiative, China planned to build infrastructure that would strengthen connections across the Eurasian continent to Europe and the Middle East while laying the groundwork for increased global influence.

Russia was initially wary of China's intentions, but by 2015 the two countries reached an agreement to link the SREB with the Russian-led Eurasian Economic Union (EEU). To date, the concrete results of this effort have remained limited. Putin later attempted to subsume such regional cooperation into the vague concept of "Greater Eurasia." For the time being, these efforts provide a political framework for easing potential conflicts between China and Russia.

In the view of many analysts, China and Russia have been able to manage their relations in Central Asia through a division of labor. In this scheme, Russia continues to be the main provider of regional security, while China serves

as an engine for regional economic development. Whether China will continue to limit its involvement in regional security over the long term, however, remains an open question. As its investments in the region accumulate, China might eventually feel compelled to provide its own security rather than relying on Russia. China's accommodation of Russia's interests in Central Asia could prove to be merely a transitional phase that is necessary in order to achieve its near-term aims. In the long run, Russia might prove unable to prevent China from gaining dominance in Eurasia.⁴⁹ A Russian defeat in Ukraine, or even an outcome in which Russia achieves some of its objectives but emerges weakened, could accelerate this process.

China's concerns about security along its western border have already pushed it to increase its role in regional security. As early as 2016, China engaged with Tajikistan, Afghanistan, and Pakistan, all of which have territory abutting China's western border, in a regional security format that excluded Russia. By 2018, news reports emerged that China had constructed a border post for the People's Armed Police (PAP) in Tajikistan, as well as a base for mountain forces in the Badakhshan region of Afghanistan. China engaged in careful outreach to Russia, seeking to provide assurance that its



goal was to provide security along its western border, rather than to encroach on Russia's security role in the region. Meanwhile, Russia continues its efforts to act as a regional security provider, primarily through the Collective Security Treaty Organization (CSTO). In January 2022, acting through this organization, Russia dispatched forces to Kazakhstan in an effort to suppress an uprising there. Russia accused the United States of attempting to foment a "color revolution" in Kazakhstan, a charge that China endorsed.

Despite long-term questions about the ability of China and Russia to harmonize their interests in Central Asia, the Taliban takeover of Afghanistan could promote China-Russia security cooperation in the near term.⁵⁰ In August 2021, as the Taliban victory neared, Russian forces participated in Joint Western-2021, a set of domestic Chinese military exercises in China's western Ningxia Province. This was the first time that Russian military forces had participated in domestic Chinese military exercises. The drills focused on a counterterrorist scenario, becoming the latest in a long series of China-Russia counterterrorist exercises dating back to Peace Mission 2005. In the wake of the Taliban takeover, a regional insurgency or the rise of a terrorist threat could prompt China and Russia to mount a joint intervention

in Central Asia with the goal of reestablishing regional order.

In the meantime, events in Afghanistan could reshuffle regional diplomacy. The Taliban takeover has already given rise to cooperation within the Pakistan-Iran-Russia-China (PIRC) grouping, which met on the sidelines of the SCO summit in September 2021. This could be another sign that important regional powers are coalescing into competing diplomatic alignments.

A Drift into Competing Blocs?

The rise of China, which could encourage Chinese efforts to gain regional dominance in Asia and eventually to displace the US-led international order, has major implications for diplomatic alignments in Asia and around the world. China's growing power and ambitions stimulate efforts by other countries, primarily in Asia but also in Europe and elsewhere, to increase their strategic coordination in order to establish a counterbalance. For its part, China has historically shunned alliances in order to avoid unwanted commitments and to maintain freedom of action in its foreign policy. Now, in the face of increasingly coordinated international resistance, China might change course and attempt to find allies and other close partners who can offer support.



Unless Russia's war in Ukraine somehow derails this relationship, the China-Russia partnership is likely to play a crucial role in such efforts. Friendly relations with Russia provide China with a secure strategic rear and prevent encirclement by hostile powers. In addition to the contributions that Russian weapons have made to China's military modernization, Russian shipments of oil and gas to China through overland pipelines contribute to China's security by reducing its dependence on energy shipments through the Strait of Malacca, which the US Navy could interdict in a crisis. Russia stands in solidarity with China on a range of international issues, including in the UN Security Council. Above all, Russia's military posture in Europe and the Middle East potentially diverts US attention away from China's efforts to establish regional dominance in Asia. The growing US-China rivalry and China's search for allies and partners could lead to growing diplomatic rigidity, both in Asia and around the world, potentially leading to the formation of competing blocs.

In response to China's rise, the United States has increasingly focused on cooperation with its allies and partners. The "America First" approach by former US President Donald Trump's administration called into question the US commitment to allies, including in

Asia. However, the Trump administration reactivated the Quad and implemented the Indo-Pacific Strategy. President Joe Biden's administration embraced these concepts, issuing a new US Indo-Pacific Strategy in February 2022. The Biden administration also attempted to rally support among allies in both Asia and Europe to address the growing competition with China. The United Kingdom and France maintain naval presences in the Western Pacific and have conducted freedom of navigation operations in the South China Sea in recent years. In August 2021, Germany also sent its own frigate to the South China Sea.

Such arrangements began to come together in new and original ways, as in the AUKUS partnership. This agreement drew the ire of France, which lost a contract to sell diesel submarines to Australia as a result, but it represented a new alignment of forces aiming to counter China's growing military power. Biden's efforts to rally support among European countries for his policies toward China also faced considerable challenges, including Germany's desire to maintain lucrative economic ties with China and to avoid being drawn into a US-China Cold War.⁵¹ Nevertheless, however unevenly, the combination of the Quad's growing



prominence, European naval activities in the Western Pacific, and the formation of AUKUS represent progress in US attempts to rally Asia, Europe, and the Anglosphere in coordinated efforts to respond to China's rise.

These developments could stimulate China's own efforts to rally other countries to its side.⁵² Some Chinese analysts have argued for years that China needs allies, or at least close partners, in its competition with the United States and its alliance network, and they contend that it has no better option than Russia.⁵³ The growing activity of the Quad, for example, could further strengthen the China-Russia partnership.⁵⁴ China and Russia could form a competing continental bloc that might also include, to varying degrees, countries such as Iran and Pakistan. The formation of the PIRC grouping at the most recent SCO summit could be indicative of such efforts. The AUKUS partnership could also strengthen China's outreach to Russia. For its part, Russia looks unfavorably on arrangements such as AUKUS, which it regards as less predictable than long-established formats such as NATO.⁵⁵ As a result of the AUKUS partnership, Russia could eventually face the prospect of Australian nuclear submarines patrolling the waters near Russia's Pacific coastline. China has already made overtures suggesting that

it desires an enhanced naval partnership with Russia.⁵⁶ If Japan strengthens its coordination with AUKUS, forming what some Russian analysts have dubbed "JAUKUS," then Russia could face an even stronger incentive to resist this new formation.⁵⁷

As these events unfold, the United States increasingly confronts the prospect of overstretch in its foreign policy.⁵⁸ The most recent US National Defense Strategy, which was published in 2018, established the goal of maintaining the US ability to defeat a single great-power adversary at any given time. Thus, the strategy implicitly acknowledges that the United States would be incapable of successfully waging major wars in Europe and Asia simultaneously. This situation offers leverage to China and Russia, each of which operates with the awareness that US military intervention in one region could leave US allies and partners exposed in the other. Short of the outbreak of armed conflict, this situation also potentially affords both countries some additional leverage at the bargaining table in diplomatic negotiations.

One possible means of addressing this problem, namely a sustained effort at Western rapprochement with Russia, is now off the table for years to come. Russia's relationship with

China could eventually break down as a result of diverging interests and the growing power gap in China's favor, but the West's ability to influence this process is likely to be limited in the near term.⁵⁹ Another approach would be for Europe to strengthen its own military capabilities and to assume greater responsibility for its own security, freeing the United States to focus on Asia. Russia's invasion of Ukraine spurred European countries, most notably Germany, to approve significant increases in defense spending. If Europe could summon the will to sustain this effort, then it could make a significant contribution to the defense of NATO's eastern flank. This, in turn, would help to ensure the alliance's ability to deter Russia in Europe while allowing the United States to devote sufficient attention to the vital task of deterring China's hegemonic ambitions in Asia.⁶⁰

The China-Russia relationship stretches US attention and resources, dramatically increasing the difficulty of fulfilling US security commitments and supporting partners around the world. As diplomatic alignments grow increasingly rigid, this situation is likely to become even more entrenched. Recent events starkly illustrate the risk of a two-front war resulting from Russian aggression in Europe and Chinese aggression in Asia. This situation

already places growing strain on US defense strategy. In addition to this concern, US and allied defense planners must consider the possibility that China and Russia could someday, perhaps following a messy settlement in Ukraine, fight together in an armed conflict in Asia.

- 1 Brian G. Carlson, "China-Russia Relations and Transatlantic Security," in: Brian G. Carlson / Oliver Thränert (eds.), *Strategic Trends 2021: Key Developments in Global Affairs* (Zürich: Center for Security Studies, ETH Zürich, 2021), 11–36.
- 2 Jakub Grygiel, "Russia Will Not Be Our Friend Against China," *Strategika*, 28.01.2021.
- 3 The quoted portions are from the author's translation of the original document in Russian. For an English translation of the full document, see "Joint Statement of the Russian Federation and the People's Republic of China on the International Relations Entering a New Era and the Global Sustainable Development," China Aerospace Studies Institute, 04.02.2022.
- 4 Yun Sun, "Ukraine: Did China Have a Clue?" *Stimson*, 28.02.2022.
- 5 Demetri Sevastopulo, "Russia has asked China for military help in Ukraine, US officials say," *Financial Times*, 13.03.2022; Edward Wong / Julian E. Barnes, "Russia Asked China for Military and Economic Aid for Ukraine War, U.S. Officials Say," *New York Times*, 13.03.2022; Christian Shepherd, "China and Russia's military relationship likely to deepen with Ukraine war," *Washington Post*, 21.03.2022.
- 6 Brian G. Carlson, "Russia's War in Ukraine: China's Calculus," *CSS Analyses in Security Policy* 303 (May 2022).
- 7 Stephen Kotkin, "The Cold War Never Ended: Ukraine, the China Challenge, and the Revival of the West," *Foreign Affairs*, May/June 2022.



- 8 See comments by unnamed US official, quoted in Niall Ferguson, "Putin Misunderstands History. So, Unfortunately, Does the U.S.," *Bloomberg*, 22.03.2022.
- 9 Eliot A. Cohen, "This Is the War's Decisive Moment," *The Atlantic*, 12.04.2022.
- 10 Sergey Radchenko / M.E. Sarotte, "What China Can Learn From German History: Beijing Should Avoid Embracing Russia's War in Ukraine," *Foreign Affairs*, 12.04.2022.
- 11 Sebastien Roblin, "China Stole This Fighter From Russia—and It's Coming to the South China Sea," *The National Interest*, 24.07.2016.
- 12 See for example Aaron L. Friedberg, *A Contest for Supremacy: China, America, and the Struggle for Mastery in Asia* (New York: W.W. Norton, 2011); John J. Mearsheimer, "The Inevitable Rivalry: America, China, and the Tragedy of Great-Power Politics," *Foreign Affairs* 100:6 (November/December 2021), 48–58; Rush Doshi, *The Long Game: China's Grand Strategy to Displace American Order* (Oxford: Oxford University Press, 2021).
- 13 Gilbert Rozman, "Tracking Russia's 'Turn to the East' over a Decade," *The Asan Forum*, 15.10.2021; Gilbert Rozman, "The Russian Pivot to Asia," in: Gilbert Rozman / Sergey Radchenko (eds.), *International Relations and Asia's Northern Tier: Sino-Russia Relations, North Korea, and Mongolia* (Singapore: Palgrave Macmillan, 2018), 13–26.
- 14 Paul Schwartz, "Russia-China Defense Cooperation: New Developments," *The Asan Forum*, 09.02.2017.
- 15 Richard Weitz, "An Emerging China-Russia Axis? Implications for the United States in an Era of Strategic Competition." Testimony to the U.S.-China Economic and Security Review Commission, 21.03.2019, 36–37.
- 16 Michael Paul, "Partnership on the High Seas: China and Russia's Joint Naval Manoeuvres," *SWP Comment* 26 (June 2019).
- 17 Vasily Kashin, *The Current State of Russian-Chinese Defense Cooperation* (Washington, DC: CNA, August 2018), 18.
- 18 Michael Kofman, "Russia-China Bomber Patrol Shows Stronger Alignment Between the Two," *Russia Matters*, 26.07.2019; Stephen Blank, "Joint Bomber Patrol Over the Pacific: The Russo-Chinese Military Alliance in Action," *Eurasia Daily Monitor* 16:109, 30.07.2019; Vassily Kashin, "Joint Russian-Chinese Air Patrol Signifies New Level of Cooperation," *Carnegie Moscow Center*, 30.07.2019.
- 19 Kotani Tetsuo, "The Threat of a Sino-Russian Fleet Circumnavigating Japan," *The Diplomat*, 14.11.2021.
- 20 Brian G. Carlson, "China-Russia Cooperation in Nuclear Deterrence," in: Sarah Kirchberger / Svenja Sinjen / Nils Wörmer (eds.), *Russia-China Relations: Emerging Alliance or Eternal Rivals?* (Berlin: Springer Nature, forthcoming).
- 21 Samuel Charap, "The Demise of the INF: Implications for Russia-China Relations." Statement for the Record for the U.S.-China Economic and Security Review Commission, 09.04.2019, 6; Stephen Blank, "Russo-Chinese Military Cooperation: The Nuclear Agenda," in: A.B. Lowther (ed.), *Guide to Nuclear Deterrence in the Age of Great-Power Competition* (Bossier City, LA: Louisiana Tech Research Institute, 2020), 263–264.
- 22 Alastair Gale, "China Is Accelerating Its Nuclear Buildup Over Rising Fears of U.S. Conflict," *Wall Street Journal*, 09.04.2022.
- 23 Michael Haas / Niklas Masuhr, "US-China Relations and the Specter of Great Power War," in: Michael Haas / Oliver Thränert (eds.), *Strategic Trends 2020: Key Developments in Global Affairs* (Zürich: Center for Security Studies, ETH Zürich, 2020), 31–52.
- 24 Graham Allison / Jonah Glick-Unterman, *The Great Military Rivalry: China vs the U.S.* (Cambridge, MA: Harvard Kennedy School Belfer Center for Science and International Affairs, December 2021).
- 25 Weitz, "An Emerging China-Russia Axis?" 37.
- 26 Andrea Kendall-Taylor / David Shullman, *Navigating the Deepening Russia-China Partnership* (Washington, DC: Center for a New American Security, January 2021), 9.

- 27 Brian G. Carlson, "Sino-Russian Relations and Security Ties to North Korea," in Gilbert Rozman (ed.), *The East Asian Whirlpool: Kim Jong-un's Diplomatic Shakeup, China's Sharp Power, and Trump's Trade Wars*. Joint U.S.-Korea Academic Studies 30 (Washington, DC: Korea Economic Institute, 2019), 59–74; Stephen Blank, "The North Korean Factor in the Sino-Russian Alliance," in Rozman (ed.), *The East Asian Whirlpool*, 35–57.
- 28 Xi Jinping / Vladimir Putin, "Joint Declaration of the President of the People's Republic of China and the President of the Russian Federation on Strengthening Global Strategic Stability." Letter dated 8 July 2016 from the representatives of China and the Russian Federation to the United Nations addressed to the Secretary General.
- 29 Carlson, "Sino-Russian Relations and Security Ties to North Korea"; Elizabeth Wishnick, "The Impact of the Sino-Russian Partnership on the North Korean Nuclear Crisis," in: *The China-Russia Entente and the Korean Peninsula*, NBR Special Report #78 (March 2019).
- 30 Artyom Lukin / Georgy Toloraya, "Moscow's Diplomatic Game on the Korean Peninsula," in: Artyom Lukin / Ilya Dyachkov / Andrey Gubin et al., *Nuclear Weapons and Russian-North Korean Relations* (Philadelphia: Foreign Policy Research Institute, 2017), 56–57.
- 31 See for example Alexander Gabuev, "Russia Is Moving Deeper into China's Embrace," *Moscow Times*, 11.09.2018.
- 32 Lyle J. Goldstein, "What Russia's Vostok-18 Exercise with China Means," *National Interest*, 05.09.2018; Brian G. Carlson, "Vostok-2018: Another Sign of Strengthening Russia-China Ties," *SWP Comment* 47 (November 2018).
- 33 Yuki Tatsumi, "China-Russia Security Cooperation: Implications for Japan," in: *Sino-Russian Relations: Perspectives from Russia, China, and Japan*, NBR Special Report #79 (May 2019), 43, 46.
- 34 James D. J. Brown, "Towards an Anti-Japanese Territorial Front? Russia and the Senkaku/Diaoyu Dispute," *Europe-Asia Studies*, 67:6 (August 2015), 893–915.
- 35 Richard Weitz, "Assessing Chinese-Russian Military Exercises: Past Progress and Future Trends," *Center for Strategic and International Studies*, July 2021, 4; Paul, "Partnership on the High Seas," 7.
- 36 Blank, "Russo-Chinese Military Cooperation," 258–259.
- 37 Tatsumi, "China-Russia Security Cooperation: Implications for Japan," 45–46; Bjørn Elias Mikalsen Grønning, "The Japan–China–Russia Triangle and Security in North East Asia," in: Jo Inge Bekkevold / Bobo Lo (eds.), *Sino-Russian Relations in the 21st Century* (Cham, Switzerland: Palgrave Macmillan, 2019), 244.
- 38 Lyle Goldstein / Vitaly Kozyrev, "Japan-Russia relations in perilous free fall," *Asia Times*, 21.11.2021.
- 39 Stephen J. Blank, "Russia: China's Force Multiplier for Its Taiwan Strategy," *Global Taiwan Brief* 7:2 (26.01.2022).
- 40 Oriana Skylar Mastro, "The Taiwan Temptation: Why Beijing Might Resort to Force," *Foreign Affairs* 100:4 (July/August 2021), 58–67.
- 41 Richard D. Fisher, Jr., "On Taiwan: China's war against Taiwan includes Russia," *Taipei Times*, 13.12.2021.
- 42 Artyom Lukin, "'JAUkus' and the emerging clash of alliances in the Pacific," *PacNet* #59, 21.12.2021.
- 43 Elizabeth Wishnick, "Russia Wants to be a Contender: The New Problem in the South China Sea," *Foreign Affairs*, 19.09.2016.
- 44 Dmitry Gorenburg / Paul Schwartz, "Russia's Relations With Southeast Asia," *Russie.Nei. Reports* 26 (March 2019), 12–13, 46–47.
- 45 Brian G. Carlson, "Russia and the China-India Rivalry," *Russian Analytical Digest* 265, 19.03.2021, 8–11.
- 46 C. Raja Mohan, "Are Indo-Russian Ties the Next Casualty of Great-Power Shifts?" *Foreign Policy*, 07.09.2021.



- 47 Alexei Zakharov, "Can the Russia-India Friendship Survive in the New Bipolar World?" *Carnegie Moscow Center*, 14.07.2021.
- 48 Sumit Ganguly, "To Fight China, India Needs to Forget Russia," *Foreign Policy*, 16.09.2020.
- 49 Nadège Rolland, "A China–Russia Condominium over Eurasia," *Survival*, 61:1 (2019), 8.
- 50 Brian G. Carlson, "The Taliban Takeover and China-Russia Relations," *CSS Analyses in Security Policy* 294 (November 2021).
- 51 Brian G. Carlson, "The Search for European Strategic Thinking on Russia and China," *The Asan Forum*, 25.08.2021.
- 52 Patricia M. Kim, "China's Search for Allies: Is Beijing Building a Rival Alliance System?" *Foreign Affairs*, 15.11.2021.
- 53 Brian G. Carlson, "China-Russia Relations and the Inertia of History," *Survival* 58:3 (June/July 2016), 213–222.
- 54 Heather A. Conley / Michael J. Green / Cyrus Newlin et al., "The Return of the Quad: Will Russia and China Form Their Own Bloc?" *Center for Strategic and International Studies*, 06.04.2021.
- 55 Andrey Kortunov, "Should Russia Be Worried by the New AUKUS Alliance?" *Carnegie Moscow Center*, 29.09.2021.
- 56 Zhao Huasheng, "China-Russian Strategic Partnership: From Continental to Marine," *Russia International Affairs Council*, 09.08.2021.
- 57 Lukin, "JAUkus" and the emerging clash of alliances in the Pacific."
- 58 Hal Brands, "The Overstretched Superpower: Does America Have More Rivals Than It Can Handle?" *Foreign Affairs*, 18.01.2022.
- 59 Hal Brands, "The Eurasian Nightmare: Chinese-Russian Convergence and the Future of American Order," *Foreign Affairs*, 25.02.2022.
- 60 Elbridge A. Colby, *The Strategy of Denial: American Defense in an Age of Great Power Conflict* (New Haven / London: Yale University Press, 2021), 268–278.

CHAPTER 2

Hypersonic Weapons: Emerging, Disruptive, Political

Dominika Kunertova

Hypersonic weapons can travel at extreme speeds in the earth's atmosphere and maneuver along an unpredictable trajectory. They are also overhyped. This chapter explains how three trends – unsubstantiated claims about the effectiveness of hypersonic weapons in development, politicized technological competition, and a widening spectrum of missile threats – obscure our understanding of the hypersonic military capability. The hype about hypersonic weapon programs is more dangerous than hypersonic technology itself.



Military vehicles carrying hypersonic missiles DF-17 drive past Tiananmen Square during the military parade, October 1, 2019. *Thomas Peter / Reuters*



Hypersonic weapons will transform the global security environment and disrupt the strategic balance, or so goes the dominant public narrative, as the three peer competitors in this field – the United States, China, and Russia – continue developing hypersonic offensive capabilities. But then physics gets in the way by showing that hypersonic weapons are neither as fast nor as agile as advertised. This chapter contributes to ongoing debates about the hypersonic threat to global stability and European security. From a military-technical and a socio-political perspective, the chapter looks at recent developments in weapon systems labeled as “hypersonic” and examines the hype surrounding these new weapons to gain a better understanding of their potential geopolitical impact in the short to medium terms. The chapter identifies the following three trends.

First, many claims about the military effectiveness of hypersonic weapons are premature. Hypersonic weapons are technically feasible and may become fully operational by 2030–2040. However, the hype surrounding these weapons exaggerates their current offensive and defensive capabilities and their short-term prospects. Hypersonic weapons have yet to reach maturity in terms of materials, propulsion, and control. Whether relying on a

boost-glide system or an air-breathing engine, these weapons are still largely in development and prototype testing phases. Countries developing these weapons are yet to overcome thermal and aerodynamic obstacles that occur during hypersonic flight in the atmosphere.

Second, technological competition has become politicized. Investing in the research and development of new emerging technologies has become part of the toolkit of great powers in their rivalry for primacy. Their hypersonic weapons development and testing serve as a political tool for demonstrating technological prowess and great-power status. In this technological competition, the main selling pitch is that hypersonic weapons are fast, low-flying, and highly maneuverable weapons that are designed to be too agile for existing missile defense systems. Reportedly, Russia deployed its first hypersonic weapon system, the Avangard, in December 2019 and China its hypersonic glider, the DF-ZF, in 2020, while the United States is likely to field its own hypersonic weapons by 2023. China appears to be ahead of the United States and Russia in the development and testing of such weapons, yet none of the great powers is expected to field any significant number of hypersonic weapons in the short to medium



terms. The unconfirmed first battle use of a Russian hypersonic missile during the war in Ukraine further demonstrates the propaganda potential of these weapons.¹

Third, the spectrum of missile threats has been widening. The hypersonic hype obscures our understanding of the emerging variety of high-speed, maneuverable threats from the sky. The language of hypersonics diverts attention toward the extreme speed of the weapons, while in most cases their maneuverability is the crucial factor. This trend suggests that although a growing number of countries are labeling their new weapon programs as hypersonic, they are actually more interested in extending the range of existing ballasting missiles along an unpredictable trajectory in the form of new unpropelled maneuverable re-entry vehicles (MARVs) than in increasing their speed. To save energy, new hypersonic gliders maneuver less in their midcourse flight than might be expected of a highly maneuverable weapon. Indeed, they maneuver no more during this phase of flight than traditional MARVs. Thus, their advantage compared to traditional MARVs is unclear.

Based on the observed trends, the condition of research in hypersonic technology raises questions about the

maturity of deployed systems and indicates that hypersonic weapons will remain a niche capability until at least 2030, when boost-glide technology is expected to become operational. Thus, it is unrealistic to anticipate that national arsenals of hypersonic cruise missiles will emerge before 2040. However, the hypersonic threat could grow qualitatively greater in conjunction with the effects of Artificial Intelligence (AI) and advancements in space technology.

Hypersonic technology itself is not a game-changer. However, set in the geopolitical context of great-power rivalry, it could prompt technological competition to spiral into costly and dangerous arms races and further nuclear build-up. Paradoxically, the military added value of hypersonic weapons vis-à-vis existing systems remains unclear. In reality, hypersonic weapons at strategic ranges have existed for decades. They have just been called intercontinental ballistic missiles (ICBMs). Therefore, the development of new hypersonic weapons to strengthen strategic deterrence and second-strike capabilities would seem to be either redundant or merely a hedging strategy. However, hypersonic weapons could generate military effects at theater ranges in naval warfare and by limiting regional missile defenses.



Lastly, hypervelocity is only one of the features that will shape future warfare in the air and space domains. This needs to be reflected in thinking about a future air and missile defense architecture that would be flexible enough to defend against the whole spectrum of missile threats (hypersonic weapons; ballistic, cruise, and aeroballistic missiles; orbital rockets; and drones).

The objective of this chapter is twofold. The first aim is to provide a better understanding of hypersonic weapon systems. The second is to explain the potential geostrategic implications of these weapons for the global security environment. The chapter starts by outlining the basics of hypersonic technology and presents the major weaponizers. It subsequently examines not only what this technology can do, but also what it could mean for global security in the short to medium terms. From a military-technical perspective, the chapter contrasts political declarations with the scientific reality and, based on available technical assessments of hypersonic technology, details some of the most pressing problems that countries wishing to go hypersonic must solve, as well as the requirements for hypersonic defense. From a social-political perspective, the chapter evaluates the extent to which new hypersonic weapon systems are a matter of hyped expectations. By

using the hype cycle concept, it examines the negative effects of the hype around hypersonic technology on our understanding of missile threats. It also investigates the added value of new hypersonic weapons in terms of both offense and defense. The chapter concludes by situating the hypersonic hype within the context of great-power competition and other so-called emerging and disruptive technologies (EDTs) and with a projection of trends beyond 2040.

A Hypersonic Primer

Hypersonic weapons are platforms that can travel at extreme speeds in the earth's atmosphere and have an outstanding ability to maneuver. As their name indicates, hypersonic systems can travel at a sustained speed of Mach 5 (that is, five times the speed of sound, or around 6,125 kilometers per hour in standard atmospheric conditions) or greater. The high speed is not the only standout feature of hypersonic weapon systems. The new generation of hypersonic weapons combines the main advantages of both ballistic and cruise missiles: extreme speed and superior maneuverability.

Hypersonic weapons can create a moment of surprise, as they can change flight direction and fly at unusual altitudes within the atmosphere.



Technically all ballistic missiles with a range longer than a few hundred kilometers are hypersonic because they can fly faster than Mach 5. However, while ballistic missiles are fast, they travel along a trajectory that is predictable, bullet-like, and easily calculated. Standard cruise missiles can navigate to the target more accurately than ballistic missiles. However, they are relatively slow, travelling at less than Mach 1 right before impact.

Hypersonic weapon systems can be divided into two main types. First are those using air-breathing engines, such as single-use hypersonic cruise missiles (HCM) and reusable aircraft, also referred to as post-stealth reconnaissance and strike aircraft. Second are those using the boost-glide system, combining a boost rocket and unpropelled hypersonic glide vehicles (HGV).²

HCMs, which fly at altitudes of 20–30 kilometers, are a faster version of existing cruise missiles. They are propelled by air-breathing supersonic combustion ramjet engines, also called scramjets. These engines compress incoming air in a short funnel before the combustion phase, allowing operation at high speeds. As they get the oxygen they need directly from the atmosphere, missiles using scramjets are smaller than ones using common jet engines. Scramjets operate under extreme conditions,

which significantly increases the difficulty of developing an engine that would work at a hypersonic speed. Efforts to achieve this feat, which rely on advances in heat-resistant materials and other enabling technologies, have been under way for several decades. The first successful test of a vehicle using hypersonic air-breathing propulsion occurred in 2004, when NASA, under its Hyper-X program, flew an X-43 demonstrator at a speed close to Mach 10, though only for a few seconds.³ Given the technical challenges of air-breathing engines that are necessary for hypersonic propulsion, no deployed systems currently use scramjets.⁴

In contrast, HGVs are unpropelled and rely on a rocket for their lift into the atmosphere. Whereas ballistic missiles fly high into space in an arc like a bullet to reach their target, gliders are lifted into the atmosphere and released early in their flight at altitudes between 40 and 100 kilometers (much lower than ICBMs). They then descend unpowered at hypersonic speeds to strike targets on the ground. The boost-glide concept involves the ability to maneuver along convoluted routes and the unpredictability of re-entry at different altitudes. This enables gliders to evade missile defenses and makes it harder to track and defend against them. In



addition to their high speed and ability to maneuver, HGVs operate across and within the air and space domains, which can have a significant impact on the effectiveness of air and missile defense systems.

Most HGVs in development and testing rely on ballistic missiles during the boost phase. However, China recently mounted a hypersonic glider on an orbiting rocket. This hypersonic weapon system combines orbital weapons technology, inspired by the Soviet Fractional Orbital Bombardment System (FOBS),⁵ and glider technology, which provides local maneuverability. “Orbital” here means that this system can circle around the earth until the weapon’s operator determines that it should stop orbiting and fly down. The novelty of this system does not lie in the combination of an orbiter and a hypersonic glider, but rather in China’s alleged attachment of a nuclear warhead to it.⁶ This type of hypersonic system has been around for some time and is well known in the form of a rocket-powered space shuttle—that is, as a vehicle that is lifted by a rocket, goes into an orbital flight mode, and then glides back to the earth.

Hypersonic weapon systems introduce several new threats to the stability of the security environment. First, incoming weapons flying at hypersonic

speeds leave defenders with as little as a few minutes to react, determine the target, identify the type of warhead, consider possible responses, and assess the potential damage that will result from any chosen course of action. The extreme speed of hypersonic systems reduces engagement opportunities and makes kinetic intercept very difficult.

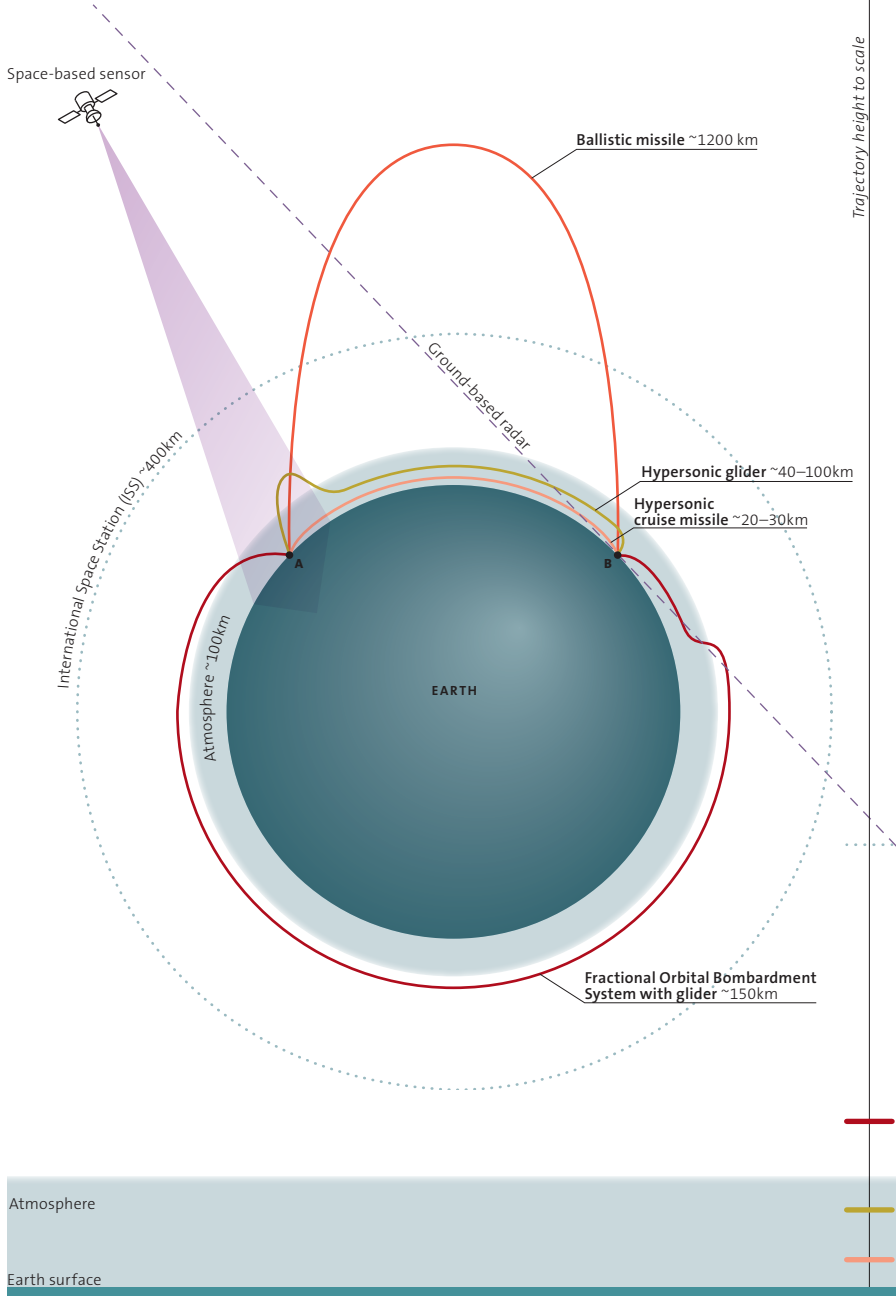
Second, the ability of hypersonic weapon systems to maneuver can deceive the defender about which target the weapon will strike. Maneuverability creates ambiguity regarding the target and, together with the unusual flight altitude, makes it difficult for existing missile defenses to detect and stop hypersonic threats. Gliders, unlike ballistic missiles, spend most of their time within the atmosphere, hiding behind the curvature of the earth. This decreases the time between detection and interception by ground-based defense systems. Further, the superior maneuverability of hypersonic weapons allows them to access undefended altitudes and to shrink the defender’s area of defense.

Third, although hypersonic weapons can rely on their high speed and accuracy to destroy the target with the kinetic energy impact alone, they can also carry supplemental warheads. The ability of dual-capable hypersonic



Flying Hypersonic

Hypersonic trajectories in a comparative perspective





weapons to carry either conventional or nuclear warheads, compounded by the defender's lack of clarity about the target, can significantly reduce the predictability of the security environment.

These advantages suggest that hypersonic weapons may have high military relevance. For instance, they could assure greater survivability against an enemy's integrated missile defenses; extremely rapid strikes against high-value, time-sensitive targets; and long-range airborne reconnaissance that is more flexible than satellites and less endangered by air defenses than drones.

Hypersonic Tech Racing

Russia, China, and the United States are the three most advanced developers of hypersonic weapons. Faster cruise missiles, maneuvering gliders, and orbiting vehicles that can evade missile defenses promise new methods of weapon delivery and ways to strengthen second-strike capabilities. They also send a powerful signal to audiences abroad. This is why open-source information about these weapons is often littered with state propaganda, while actual technological progress is kept secret.

Russia. After having announced its first hypersonic weapon systems in 2018, Russia has prided itself on leading the deployment of an entire new

class of weapons.⁷ For some time, Russia has been interested in acquiring nuclear-capable hypersonic delivery systems to strengthen its nuclear deterrence posture, which Moscow believes was undermined by Washington's withdrawal from the Anti-Ballistic Missile Treaty in 2002.

Russia has publicly disclosed three hypersonic weapon systems. First is the nuclear-capable HGV Avangard, which is boosted by an ICBM (likely the new Sarmat ICBM) before it glides at speeds exceeding Mach 20 toward its target. Second is a ship-launched HCM 3M22 Tsirkon, which has a range of 500 kilometers and may become a key Russian naval strike capability. Third is the maneuvering air-launched ballistic missile Kh47M2 Kinzhal. Although this is neither an HGV nor an HCM, Russia reports it among its hypersonic weapons, since it can reach Mach 10 within a range of 2,000 kilometers. This is because Kinzhal can be launched from a modified supersonic MiG-31 interceptor jet, which gives the missile a boost to reach higher speeds at unusual altitudes and extend its range. However, this does not say anything about any alleged superior maneuverability and accuracy of Kinzhal missiles.

Russia has built a large network of research and testing facilities, such as



National Hypersonic Weapon Programs

| <i>Hypersonic Weapon System</i> | <i>Range (km)</i> | <i>Status</i> |
|---|-------------------|---|
| UNITED STATES | | |
| Navy | | |
| Conventional Prompt Strike (ship or submarine launched HGV) | > 2800 | Initial Operational Capability (IOC) in 2025 and deployment in 2028 |
| Offensive Anti-Surface Warfare (OASuW) Increment 2 (anti-ship HCM) | (?) | (?) |
| Army | | |
| Long-Range Hypersonic Weapon (HGV) | > 2,800 | Prototype flight testing until 2023 |
| Air Force | | |
| Hypersonic Attack Cruise Missile | (?) | Critical design review in 2023 |
| AGM-183 Air-Launched Rapid Response Weapon (HGV) | < 1,600 | IOC in 2022 |
| DARPA | | |
| Tactical Boost Glide (air-launched HGV with a tactical range) | (?) | Flight testing through 2022 |
| Operational Fires (ground-launched HGV) | < 5,400 | Critical design review in 2022 |
| Hypersonic Air-breathing Weapon Concept (air-to-air HCM) | (?) | Final program review in 2022 |
| RUSSIA | | |
| Avangard (nuclear-capable HGV) | > 5,500 | IOC in 2019 (?); IOC of its Sarmat ICBM component in 2022 |
| 3M22 Tsirkon (ship-launched HCM) | < 1,000 | IOC in 2023 |
| Kh-47M2 Kinzhal (maneuvering air-launched ballistic missile) | < 2,000 | IOC in 2021 |
| CHINA | | |
| DF-17 (medium-range ballistic missile to carry HGVs) | < 2,500 | Entering service (IOC in 2019?) |
| DF-41 (dual-capable ICBM to carry HGVs) | > 5,500 | Entering service (IOC in 2019?) |
| DF-ZF HGV | < 2,400 | Entering service (IOC in 2020?) |
| Starry Sky-2 / Xing-King 2 (nuclear-capable HCM) | < 800 | IOC in 2025 |
| Hypersonic fractional orbital bombardment system using a Long March rocket (a space-launched HGV) | > 5,500 | Tested in August 2021 |



wind tunnels in Zhukovsky and Novosibirsk, as well as launch sites such as Dombarovsky Air Base and the Baykonur Cosmodrome. Yet many observers remain skeptical about the readiness of these weapons, as evidence indicates that the Russian hypersonic industrial base is under-resourced.⁸ It is plausible that none of the Russian hypersonic cruise missiles and gliders will be fully operational for at least a decade.⁹

China. Following years of effort, China is leading the development and testing of hypersonic weapons. The fear of a pre-emptive US strike that would disable China's nuclear force and deprive it of its ability to retaliate appears to be motivating Beijing to invest heavily in hypersonic research and development. Some reports suggest that China has the most robust infrastructure for testing hypersonic weapons – the China Aerodynamics Research and Development Center alone claims to have 18 wind tunnels – that allows it to conduct “20 times as many hypersonic tests as the United States.”¹⁰ Some researchers in China even consider hypersonics a distinct operational domain.¹¹

These geostrategic concerns prompted China to fit DF-41 ICBMs with multiple HGVs that are supposedly able to carry conventional or nuclear warheads.¹² China has also been developing hypersonic weapons to further

project its power in the South China Sea and over Taiwan, while increasing its chances of circumventing US missile defenses in the Indo-Pacific. In this respect, China has tested a medium-range ballistic DF-17 missile designed to launch up to eight independently guided HGVs. Further, Starry Sky-2, a tactical nuclear-capable HCM that uses a waverider design that can derive lift from its own shock waves, could become a core feature of China's future anti-ship missiles. China may also fit conventionally armed HGVs onto DF-21 and DF-26 ballistic missiles to improve its anti-access/area denial (A2/AD) capability. All of the DFs mentioned here are supposedly already operational.

Lastly, in 2021, China demonstrated its innovative hypersonic research. In contrast to previous HGV tests using ballistic missiles, China attached a nuclear-capable hypersonic glider HGV92 onto an orbital Long March rocket, which resembles a fractional orbital bombardment system. In the test, the glider flew in the near space around the earth before speeding down toward its target.¹³ This means that China is the first country that is moving towards acquiring a nuclear-armed orbital HGV that is capable of circumventing US missile defenses and warning stations spread over the Northern Hemisphere.



United States. Although the United States has been researching hypersonic technology for decades, its recent budget boost for military hypersonics has been a reaction to Russia and China's advances in the field.¹⁴ Unlike China and Russia, the United States has publicly ruled out acquiring nuclear-capable hypersonic weapons.

Until recently, the United States was developing and testing only experimental prototypes and had no weapons procurement program on record. The situation changed when the US Air Force requested 12 HGVs for 2022, a product of its AGM-183 Air-Launched Rapid Response Weapon (ARRW) program. However, this procurement plan has been delayed due to three failed booster flight tests in 2021.¹⁵ In addition to its two development programs, the US Air Force is also consulting industry on "Project Mayhem," which seeks to design a longer-range hypersonic cruise missile. The US Navy's flagship hypersonic program is a submarine-launched glider, which is to be deployed on Zumwalt-class destroyers by 2025 and Virginia-class submarines by 2028. Very little is known about another of the Navy's hypersonic weapon systems, the Offensive Anti-Surface Warfare Increment 2. It is likely to be an air-launched, anti-ship HCM mounted on carrier-based fighters. The US

Army is expecting to field its mobile ground-launched Long-Range Hypersonic Weapon in 2023. Finally, the Defense Advanced Research Projects Agency is developing several boost-glide and air-breathing weapon concepts.¹⁶

Other countries. The interest in hypersonic technology is not limited to great powers. Several Western countries have been researching hypersonic propulsion systems and even hypersonic offensive and defensive capabilities. France appears set to become the first European country to develop its own hypersonic weapons. Launched in 2019, its Project V-MaX (Experimental Maneuvering Vehicle) aims to create an HGV by 2022. This project, a joint venture between Airbus and France's Safran, is meant to improve the French nuclear deterrent by modifying its air-to-surface ASN4G supersonic missile for hypersonic speeds. However, it can also enhance France's arsenal of conventional cruise missiles. France is not shying away from the prospect of developing a nuclear-capable hypersonic missile.

Elsewhere in Europe, Norway has been developing advanced solid fuel ramjet technologies together with the United States. These could be applied to feed into future hypersonic missiles



for the US Army and Navy. At the EU level, member states are paying attention to potential defenses against hypersonic threats. In 2021, the European Defence Agency published a call for research projects on advanced over-the-horizon radars and endo-atmospheric interceptors.

In the Indo-Pacific, Australia continues to work with the United States on hypersonic air-breathing technologies. India has been working with Russia on the BrahMos II, a Mach 7 HCM similar to the Russian Zirkon, and testing a dual-capable HCM. Japan is developing a scramjet, the Hypervelocity Gliding Projectile, and a hypersonic anti-ship missile for its defenses in the East China Sea. Japan's strengthened security alliance with the United States additionally involves the development of hypersonic countermeasures. South Korea has also been researching the military applications of hypersonic technologies, as China is not the only source of hypersonic threats in the region. North Korea has recently tested what it calls a hypersonic weapon. It very likely fired a new ballistic missile from the Hwasong family with a range of 500 kilometers. In an effort to fool recently reinforced US and South Korean missile defense shields, North Korea extended this missile's range to 700 kilometers by having it release a maneuvering glider.

Where Is the Catch?

Extreme speed and maneuverability top the shopping list of requirements for hypersonic weapons. Hypersonic weapons are expected to be difficult for defenders to detect, track, and intercept, as they leave very little time for defenders to react to them and determine their intended targets. This feeds into their reputation of being frightening, unstoppable, and disruptive. Nevertheless, mastering hypersonic capability – the ability to fly fast and far within the atmosphere, while retaining navigability – is literally a matter of rocket science.

The technological requirements include not only those comparable to spacecraft re-entry but also additional needs dictated by military missions.¹⁷ The ability to fly at great speeds and maneuver requires the overcoming of significant complications that result from physical limitations imposed by atmospheric flight. This involves aerothermodynamics, signature management, sensors, communication, control, and navigation.¹⁸ The manufacturers of hypersonic weapons still need to engineer their way out of some persisting shortcomings to find the right balance among speed, flight altitude, maneuverability, and accuracy. These trade-offs imply performance limitations that await further evaluation, especially in terms of



the development of possible defenses against a hypersonic threat.¹⁹

Manufacturing hypersonic flight. Several engineering challenges are apparent in this area. First, scramjets and gliders flying at hypersonic speeds operate under extreme conditions with high stagnation point temperatures. This necessitates the use of heat-resistant materials that prevent the weapons from melting away before they reach their target. The friction from the compression of air in front of the vehicle as it travels through the dense atmosphere heats its surface to levels exceeding 1,600 degrees Celsius. Hypersonic weapons need to be built from thick, dense materials that capture and emit the heat, use heat sinks to absorb and re-radiate the heat, or rely on heat shields made of ablative materials that gradually wear away. Also, blunt conical or wedge-shaped designs are better at keeping the vehicle cool, as they create a shock wave that insulates it while providing a greater surface area for the heat to spread across. However, this creates the challenge of how to prevent shock waves from disrupting the vehicle's trajectory. Importantly, hypersonic flights are a delicate affair, as the fast-flying vehicle is sensitive to surface imperfections. For instance, a single crack in the carbon panel on the outer skin of the Columbia space shuttle, by definition a hypersonic

glider, caused the vehicle to disintegrate in 2003.

Second, hypersonic flight is a very fuel-demanding and thus costly affair. At such great speeds, air resistance is extremely high. Even if manufacturers can design the vehicle to prevent it from melting or falling apart, it still requires vast amounts of fuel to make it fly that fast to counter the pressure of the atmosphere.

Third, the maneuverability of hypersonic weapons, which increases accuracy and defense system evasion, is a less reliable feature than usually assumed. The extreme surface temperature that a hypersonic vehicle must deal with creates a line of ionized gas that can disrupt navigation signals. Even a small deviation from a given route can add up to a significant change in course over longer distances. Further, the potential for signal disruption suggests that hypersonic weapons need to travel more slowly during their terminal phases, when external guidance and communication with GPS satellites are likely to be most important. However, reduced speeds diminish the potential lethality of the missile that could be caused by its kinetic energy.

Fourth, high-temperature surfaces produce infrared signatures. The plasma that a hypersonic vehicle produces can



make it visible to heat-seeking sensors based in space. Hypersonic weapons may thus be betrayed by the heat they produce for much of their atmospheric flight, which was thought to help them hide from ground-based radars behind the curvature of the earth. The side effects of flying low in the atmosphere can thus include negative consequences for a vehicle's performance and exposure to missile defenses.

Missile defense is hard, but hypersonic defense is harder. Hypersonic weapons can be stopped. However, the building of effective defenses against them would require major improvements to the space sensor architecture. It would also necessitate new interceptor capabilities to counter such weapons' near-space operating altitude (20–60 kilometers), unpredictable trajectory, and speed. Such defense systems will need to be layered and more integrated than ballistic missile defenses alone.²⁰ This will involve seamlessly connecting space-based sensors with upper layer intercept capabilities outside the atmosphere and lower layer intercept capabilities within the atmosphere.

Since the mid-2010s, the US Missile Defense Agency (MDA) has been researching hypersonic missile defense options, including interceptor missiles, hypervelocity projectiles, laser guns, and electronic attack systems. MDA

and the Space Development Agency (SDA) are presently developing layers of sensor satellites to be used for hypersonic missile launch indication, warning, and tracking. MDA has also been looking into a glide phase interceptor and alternative mechanisms to destroy incoming hypersonic weapons. MDA believes that the time to engage hypersonic weapons is during their earlier glide phase of flight, as this is when they maneuver less, are more fragile, and are easier to destabilize.²¹ Exploiting the weaknesses of hypersonic flight in the atmosphere, namely heat and drag, will be key for longer-range interceptors. Such interceptors could force hypersonic weapons to expend energy on extra maneuvers, slowing the threat down to diminish its performance. It is worth noting that engaging hypersonic weapons earlier in their flight will be necessary for area-wide defense rather than point defense. Further, hit-to-kill interceptors could be supplemented with area-wide mechanisms, including electromagnetic microwaves that damage a missile's internal electronics and cyber jamming countermeasures. Due to the high surface temperature of hypersonic vehicles, it is doubtful whether lasers could act as effective countermeasures.

Even though China is not building any missile defense systems against



hypersonic weapons, its extensive research provides fertile ground for doing so.²² For instance, a 2012 proposal by the China Aerospace Science and Industry Corporation Academy of Defense outlined a defense architecture composed of a sensor detection network, a high-speed information center to process data in real time, a command-and-control system, and a set of fast response, air-to-air space-based interceptors. Similarly, the Aerospace Engineering University in Beijing explored the use of existing surveillance assets, such as early warning aircraft and ground radars, for early detection of hypersonic missiles. China's Air Force Engineering University is also examining the feasibility of deploying high-altitude, long-endurance drones to intercept hostile hypersonic strikes.

Two problems with hypersonic defense remain. First, as to detection, most countries rely on ground- and sea-based radars for early warning. These are not equipped for the persistent tracking of hypersonic weapons after launch or when flying at lower altitudes. In other words, this means below the altitude of ballistic missile interceptors and above the altitude of the lower layer air defenses. Effective defense systems would need to connect layers of terrestrial radars with space-based sensors for a global detection and tracking capability to spot an

incoming hypersonic threat. Second, as to interception, although existing defense systems could be adapted to intercept hypersonic weapons, they can cover only small areas and would be prohibitively expensive to use for continental defense.²³ In the European context, any effective defense against fast-flying and maneuvering missiles will need to be continent-wide and thus require international cooperation with allies. Ultimately, such a defense system would also need to employ AI, as it would require new software tools to process intelligence fast enough to detect and track missile launches.

The Patriot and the Terminal High Altitude Area Defense (THAAD) systems may already be able to detect hypersonic weapons during the glide or terminal phases, when such weapons operate within the atmosphere and at lower speeds. However, existing interceptors that would be able to tackle hypersonic weapons during their terminal phase of flight are designed to engage missiles in the vacuum of space, not in the dense atmosphere. Nevertheless, software and propulsion modifications for the Patriot and THAAD systems may offer a capability for shorter-range glide-phase intercept.²⁴

More Hype, Less Sonic

The idea of flying at hypersonic speeds has been around for some time.



Although the theoretical foundations were laid down in the 1960s, the lack of suitable manufacturing processes hindered the development of hypersonic systems. In addition, air-breathing engines for space shuttles were judged too heavy and costly. Today, spurred by great-power rivalry, recent scientific advances have brought these systems within reach, as they have allowed prototypes to be constructed and tested. This has sparked hype and impatience among trendspotters about whether hypersonic technology will unleash a new industrial and/or military revolution.

The hype is not unique to hypersonic weapons. The phenomenon of emerging and disruptive technologies (EDTs) is plagued with a lack of understanding of the time it takes for a given technology to mature, innovation and adoption challenges, and its real-world effects in both the short and long runs. According to a 2020 NATO Science and Technology Organization report, the EDTs include data, AI, autonomy, space, hypersonics, quantum technologies, biotechnology, and materials. The report suggests that all of these are either currently in nascent stages of development or are undergoing rapid development.²⁵

Technology is labeled as “emerging” when it is coming to maturity. At this

stage, the use of such technologies is not widespread, nor are their effects and functions fully known. Although a technology maturity timeline is often difficult to determine, emerging technologies make policymakers reconsider the status quo and ponder their implications for future warfare.

Technologies considered “disruptive” are those that are expected to have major or even revolutionary effects, but have yet to be exploited. For example, they could undermine nuclear deterrence, increase risk of a nuclear first strike, expand opportunities for crisis escalation, and heighten insecurity caused by some form of duality in a technology. Dual-purpose technologies having both civilian and military uses or application in both the conventional and nuclear realms can be destabilizing.²⁶ In contrast, some experts point out that disruptive technologies can also have stabilizing effects. For instance, this could occur if a technology were to improve early warning and detection mechanisms or enable new arms control verification measures.²⁷

Other researchers disagree in principle, arguing that a technology itself cannot be disruptive, stabilizing, or game-changing. This view emphasizes the importance of technology adoption processes. For example, here, the



success of armed forces in using open architecture and modular systems to absorb fast-paced technological changes is vitally important. Ultimately, the military technology represents the means to the political ends; only the ways in which the latter are achieved can be disruptive.

Insights from the sociology of technology adoption can help in understanding the hype surrounding hypersonic weapon systems and temper unrealistic expectations. In the early 1990s, Howard Fosdick outlined the stages of technological development through scientific discovery, innovation, and increased public awareness, but also through failures and efforts along ultimately unproductive avenues. He noted that the greatest amount of discussion about many technologies takes place before they reach maturity, prior to their real use. In doing so, he suggested that usability of a technology and its publicity are inversely correlated.²⁸

According to the Gartner Hype Cycle, the most well-known cycle of technological progress built upon Fosdick's work on technology adoption, a trending technology goes through five key phases, each of which describes a state of attention towards the technology: 1) the Innovation Trigger, marking a new technology or scientific discovery;

2) the Peak of Inflated Expectations, when the technology gains publicity; 3) the Trough of Disillusionment, when the limitations of the technology come to the fore; 4) the Slope of Enlightenment, which comes with a better understanding of the technology's utility; and 5) the Plateau of Productivity, the stage of a mature application of the "unhyped" technology.

Based on these criteria, data, AI, autonomy, space, and hypersonics will produce significant or disruptive impacts on military capabilities over the next five to 10 years, while quantum technology, biotechnology and materials are still emerging and will need 10–20 years to produce their disruptive effects (see figure).²⁹

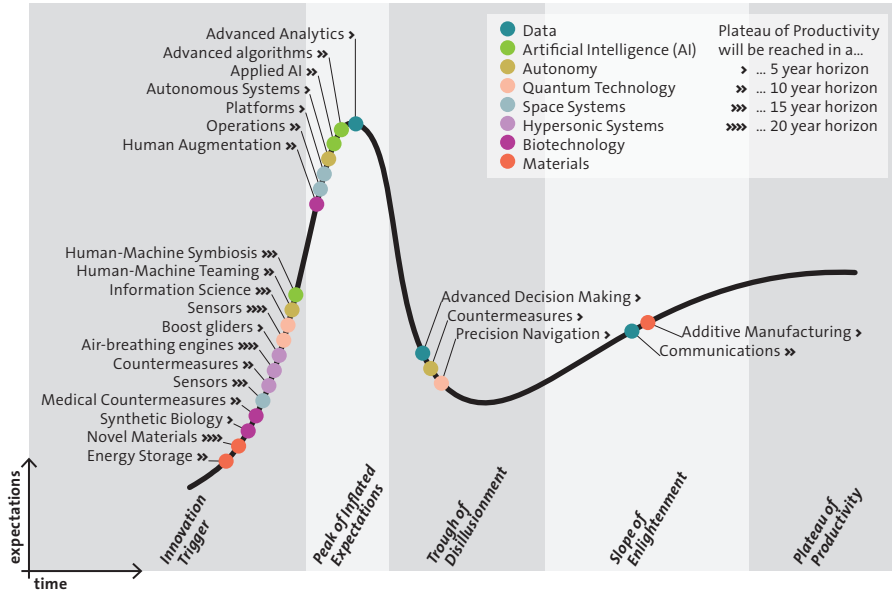
This hype cycle shows that the attention does not represent a technical assessment. Instead, it often reflects the interests of political actors and profit-oriented industries. It also highlights the role that media play in promoting the impatient expectation of an impending industrial-military revolution. All technologies face the test of proving their usefulness and viability, but this is something that usually happens only after the hype fizzles out.

International security scholars and tech experts who look beyond the



Emerging and Disruptive Technologies Hype Cycle

Technology adoption process in a time perspective



Source: NATO Science and Technology Organization, 2020, Science and Technology Trends: 2020–2040

allure of wonder weapons question the technical feasibility and military effectiveness of hypersonic weapon systems.³⁰ They warn that these systems have yet to reach maturity in terms of materials, propulsion, and control. Indeed, even though unpropelled hypersonic gliders use existing ballistic missile technology for their boost, such gliders may only become fully operational by 2030 at the earliest.

Likely advancements before 2030 may include air-launched tactical boost-glide vehicles. However, longer-range gliders will only be developed by

countries that already have ICBMs. Further, propelled hypersonic cruise missiles, such as the Boeing X-51 Waverider, BrahMos II, and Tsirkon, will take longer to achieve maturity because of the complex air-breathing technology they use for reaching hypersonic speeds. As the advanced technology required for a functional scramjet represents a major obstacle, reusable hypersonic aircraft and the dawn of a post-stealth world loom beyond the horizon of 2040.³¹

The impact of hypersonic technology will likely be enhanced in



combination with other EDTs. For instance, the conjunction of space, hypersonic, and material technologies could reduce manufacturing costs, increase reliability, and facilitate the spread of new systems such as long-range hypersonic surveillance and reconnaissance drones. Moreover, effective countermeasures against these systems will likely require AI-enhanced performance support to improve situational awareness. Current defense systems will not be able to process data quickly enough to respond to incoming hypersonic weapons.

What if it is not the speed that counts?

The hype has brought about a tendency to apply the label “hypersonic” to any system that is able to maneuver at high speeds. Few observers realize that all ballistic missiles with a range longer than a few hundred kilometers fly faster than Mach 5 and thus are, by definition, hypersonic missiles. For instance, ballistic missiles with a range of 500 kilometers can already reach Mach 6, those of 1,000 kilometers Mach 8.7, and so on.

Recent studies based on computational modeling point out that the longer and farther an HGV glides, the slower it approaches its target flying at a lower speed than a ballistic missile of the same range.³² Any maneuver by a vehicle results in increased drag, which

requires additional thrust to maintain a given speed. However, scramjet engines are unable to compensate for this, and gliders have no engine at all. This suggests that countries developing hypersonic weapons are interested in improving the ability of their missiles to maneuver rather than in how fast they fly.

Labeling gliders as a new hypersonic capability can be misleading in this respect. Current gliders are usually fitted to regular ballistic missiles. However, to improve their ability to maneuver to their target, some ballistic missiles have already been equipped with a MARV, which is a type of ballistic missile warhead capable of shifting trajectory in flight and autonomously tracking ground targets. The North Korean missile launch in January 2022 is a case in point. Although Pyongyang claimed that this was a hypersonic missile, in reality it was a test of a regular shorter-range missile that travelled along a ballistic trajectory and then dropped below the radar to glide down, conducting a 120-kilometer cross range maneuver in the process.³³

This shows that talking about a hypersonic threat by referring solely to speed misses the point: Hypersonic weapon systems are slower than typical ballistic missiles of a similar range. However, they are dangerous because



of their ability to maneuver at high speed. Importantly, different types of re-entry vehicles have different degrees of maneuverability.³⁴ This degree depends on where the glider detaches from its booster and where the maneuvers begin. Hypersonic gliders currently in development should be considered an improvement over the design of multiphase ballistic missiles in the form of a new type of unpropelled MARV.

What problem are hypersonic weapons trying to solve? The expert community is split about the strategic implications of hypersonic weapons.³⁵ On the one hand, such weapons can enhance deterrence by improving second-strike capabilities. On the other, they could erode deterrence, for example if they could enable a country to take out an opponent's second-strike capability.

The strategic advantage of hypersonic weapons is likely to be minimal. This is because the speed and range of hypersonic systems, even if they are nuclear-capable, are comparable to existing ICBMs and submarine-launched ballistic missiles.³⁶ This means that since the United States, Russia, and China already have this "hypersonic" capability, the development of new hypersonic weapons is a waste of money. It can be argued, however, that new hypersonic weapons could reinstate

mutually assured destruction between two nuclear-armed countries. For instance, this could be the case if a country were to build advanced ballistic missile defenses that would diminish the nuclear threat of the other.

Even though the advantage of hypersonic weapons might be the weakest at intercontinental ranges, for Russia they represent a hedging strategy. They offer a new way of overcoming US missile defenses and signaling the reinforcement of Russia's strategic posture. However, considering that European capabilities to defend against a full-scale attack using nuclear ICBMs are non-existent, the introduction of hypersonic weapons into the Russian arsenal on top of existing nuclear-capable missiles does not qualitatively worsen the threat picture.

Similarly, China hopes to counter a US strike that could wipe out Chinese missiles by building additional second-strike capability. Importantly, conventionally armed hypersonic weapons could upset strategic stability by offering a way to keep conflict escalation below the nuclear threshold.³⁷ US nuclear deterrence against a Chinese non-nuclear hypersonic attack may not be credible; such a threat may influence US willingness to defend its Indo-Pacific allies.³⁸ However, it is not entirely clear whether



hypersonic weapons can add any strategic value to China's existing roughly 100 ICBMs that can target the United States or to the second-strike capability provided by its six Type 094 Jin-class nuclear-powered ballistic missile submarines.³⁹

A more plausible explanation, therefore, is that hypersonic weapons have acquired an illusion of strategic importance in the public discourse, and the development of these weapons has become politicized. Regardless of the actual strategic military effectiveness of hypersonic weapons, the hype alone could create instability between nuclear-armed countries. For instance, this could be done by raising fears of a disarming attack or – in a situation where deterrence was based on the unverified performance of weapons systems – by creating the illusion of an effective deterrent capability. Hypersonic weapons can contribute to conflict escalation through their established reputation for ambiguity concerning the warheads they carry and their targets. This is on top of their high speeds that reduce a defender's response time. Hypersonic weapons could also contribute to the risks posed by other advancing or emerging technologies, such as space and cyber capabilities.⁴⁰

While not exactly a Sputnik moment, the Chinese test of a hypersonic

FOBS-glider weapon prototype testifies to the broader military buildup in China, which is expanding into the space and cyber realms. It also confirms China's entry into geopolitical and military competition with the United States. Existing Russian and Chinese ICBMs would travel to the North American continent over the North Pole, high in space, and would thus be visible to radar based in this region. However, China has found a way to evade radars in the Northern Hemisphere by taking a route over the South Pole, where there is no "SOUAD," a southern equivalent to the North American Aerospace Defense Command (NORAD). In the context of China's rapid development of strategic nuclear weapons, its testing of hypersonic weapon systems is a source of concern and dispels any doubts about China being a strategic rival.

Hypersonic weapons will have their most significant impact on a sub-strategic level due to their ability to frustrate regional missile defenses and endanger locally deployed armed forces (see figure). Their military application at shorter, tactical ranges could include engaging high-value and time-sensitive targets, rapid re-targeting during flight, and creating impermeable advanced A2/AD capabilities. For instance, Chinese high kinetic



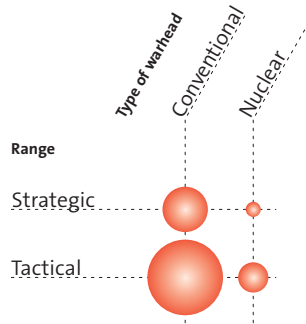
strikes could place US battle groups and forward deployed forces at risk, and even make aircraft carriers more vulnerable. This could cause military operations to disintegrate from the outset.⁴¹ If hypersonic weapons target sensors, communication channels, and radars, they could disable ships equipped with missile defenses and disrupt naval operations.⁴² In this sense, China's FOBS-glider test was just a distraction. Tactical hypersonic systems with strategic implications are the next weapons to watch closely.

The Future: Same but Different

This chapter has looked beyond the headlines and argued that the hype about hypersonic weapons is more disruptive than the technology itself. Gliders will not be fully operational before 2030. Missiles using air-breathing technology will not reach maturity before 2040, though some may be deployed prematurely. However, the chapter has also argued that great powers instrumentalize the reputation of hypersonic weapons in their status-seeking efforts.

Hypersonic weapons are not as fast or as agile (yet) as advertised. It is improbable that such weapons will become more than just a niche capability due to their high level of sophistication and costly development. Indeed, this makes them unaffordable when

Hypersonic Effects



compared to other weapon platforms with similar military effects. This is far from saying that hypersonic weapons are not troubling. A nuclear-capable glider is still a weapon system that is able to deliver nuclear warheads.

Hypersonic weapons are not unstoppable. The most likely short-term impact of hypersonic weapons will be on defense. Countries will accelerate their work towards upgrading and multilayering their air and missile defenses, ensuring above all a persistent wide area coverage with a solid space-based sensor architecture. Although the offense-defense dynamic will intensify, it remains to be seen whether the pace of technological change will dictate the nature of interactions between countries: in particular, whether such interactions will feature cooperative arms control dialogue or conflictual arms racing.



This chapter has identified a different kind of danger: labelling anything that is able to maneuver at high speeds as a new hypersonic weapon. This aspect of the hype around the term ignores the existence of a whole spectrum of weapons that feature differences in their operational altitudes, duration of hypersonic flight, timing, and degree of maneuverability. Hypervelocity is not new, and it is only one of the characteristics that will define the future of missile warfare.⁴³ Although at first glance it may seem puzzling, using the label hypersonic for every high-speed weapon program in development is misleading. For instance, this would obscure the fact that many countries are fitting standard ballistic missiles with maneuverable add-ons to make their theater-range missiles a war-winning capability that is more agile and able to fly farther.

Hypersonic weapons are dangerous, but they are not revolutionary. To portray them as such is irresponsible, as it feeds into wishful thinking about a capability that would make a decisive victory possible. This can encourage reckless behavior, alter the perception of one's own vulnerability, and lead to escalation among adversaries confident about their chances of success when they have such weapons in their arsenals. A high-tech silver bullet that could remove the fog of war and guarantee victory in one

surprise blow has always been a fantasy among strategists in their brainstorming of new warfighting concepts.⁴⁴ It is no surprise that hypersonic weapons generated promises of fast and efficient victories before anyone had even demonstrated their potential for destruction or surprise.

Although it looks like China is getting “FOBSessed” about evading US missile defenses, and Russia keeps polishing its Avangard glider, what we observe is not an arms race but a competition to master technologies that will define the future of warfare. Indeed, great powers are engaged in a multi-domain technological race that includes quantum technology, AI, autonomy, space, and other EDTs. To exercise caution regarding the fearmongering discourse surrounding EDTs, policymakers and defense planners should not ask what kind of wonders a new system can work but whether it is the optimal and desirable way to achieve political and military objectives. Several important questions regarding hypersonic technology still await convincing answers. Above all, what added value can the new-generation hypersonic technology deliver, and which policies, concepts, and doctrines should govern its use?

The existing scientific research suggests maintaining a healthy skepticism

about the potential military applications of hypersonic technology. Hypersonics are most likely to find their primary application far from the military realm, such as in the form of reusable space transport vehicles that make access to space easier. Indeed, fully functioning air-breathing engines would be a notable breakthrough in propulsion technology and a major step forward in efforts to build efficient space infrastructure.

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- 1 Dominika Kunertova, "Russia's hypersonic story in Ukraine: 'Is this a dagger which I see before me?'," *CSS Blog*, 23.3.2022.
- 2 This traditional dichotomy simplifies the fact that even hypersonic weapons propelled by a scramjet must be accelerated first by a rocket to Mach 3, at which point the scramjet can start working and bring the missile to a speed above Mach 5. This is true even for many traditional cruise missiles, which need to be boosted by a solid rocket motor.
- 3 Yvonne Gibbs (ed.), "NASA Armstrong Fact Sheet: Hyper-X Program," *NASA*, 07.08.2017.
- 4 Kolja Brockmann / Markus Schiller, "A matter of speed? Understanding hypersonic missile systems," *SIPRI Commentary*, 04.02.2022.
- 5 The Soviet FOBS was deployed in 1969 and withdrawn from service in 1983 after Moscow and Washington signed the second Strategic Arms Limitation Treaty (SALT II). Timothy Wright, "Is China gliding toward a FOBS capability?" *IISS Analysis*, 22.10.2021.
- 6 This system does not violate the 1967 Outer Space Treaty as it does not stay stationed in space. "Fractional" in FOBS means that the rocket does not complete a full circle around the Earth.
- 7 Vladimir Putin, Presidential Address to the Federal Assembly, 01.03.2018.
- 8 The factory that manufactures key components of the Kinzhal is going bankrupt. Sidharth Kaushal, "Putting the Russian Hypersonic Threat in Perspective," *RUSI*, 28.09.2021.
- 9 Justin Williamson / James J. Wirtz, "Hypersonic or Just Hype? Assessing the Russian Hypersonic Weapons Program," *Comparative Strategy* 40:5 (2021), 468–481.
- 10 Kelley M. Saylor, "Hypersonic Weapons: Background and Issues for Congress," *Congressional Research Service*, 19.10.2021.
- 11 Tong Zhao, "Conventional Challenges to Strategic Stability: Chinese Perceptions of Hypersonic Technology and the Security Dilemma," *Carnegie Endowment for International Peace*, 23.07.2018.
- 12 Richard Weitz, "China's Hypersonic Missiles: Methods and Motives," *Jamestown Foundation*, 30.06.2021.
- 13 Demetri Sevastopulo / Kathrin Hille, "China Tests New Space Capability with Hypersonic Missile," *Financial Times*, 16.10.2021.
- 14 James M. Acton, "Silver Bullet? Asking the Right Questions about Conventional Prompt Global Strike," *Carnegie Endowment for International Peace*, 03.09.2013.



- 15 Ashley Roque, "USAF delays ARRW production decision, eyes revamped test plan," *Janes*, 20.01.2022.
- 16 Saylor, *Hypersonic Weapons*, 8.
- 17 Brockmann/Schiller, *A matter of speed?*
- 18 Cameron L. Tracy / David Wright, "Modelling the Performance of Hypersonic Boost-Glide Missiles," *Science and Global Security* 28:3 (2020), 135–170.
- 19 Ivan Oelrich, "Cool your jets: Some perspective on the hyping of hypersonic weapons," *Bulletin of the Atomic Scientists* 76:1 (2020), 37–45.
- 20 Tom Karako / Masao Dahlgren, *Complex Air Defense: Countering the Hypersonic Missile Threat*, (Lanham: Rowman and Littlefield, 2022).
- 21 Ibid, 24.
- 22 Weitz, *China's Hypersonic Missiles*.
- 23 James M. Acton, "Hypersonic Weapons Explainer," *Carnegie Endowment for International Peace*, 02.04.2018.
- 24 Karako/Dahlgren, *Complex Air Defense*, 24.
- 25 NATO Science and Technology Organization, *Science and Technology Trends 2020–2040: Exploring the Sc&T Edge* (Brussels: NATO, 2020).
- 26 Michal Onderco / Madeline Zutt, "Emerging Technology and Nuclear Security: What Does the Wisdom of the Crowd Tell Us?" *Contemporary Security Policy* 42:3 (2021), 286–311.
- 27 Jane Vaynman, "Better Monitoring and Better Spying: The Implications of Emerging Technology for Arms Control," *Texas National Security Review* 4:4 (2021), 33–56.
- 28 Howard Fosdick, "The Sociology of Technology Adoption," *Enterprise Systems Journal* (1992).
- 29 NATO Science and Technology Organization, *Science and Technology Trends 2020–2040*, 6.
- 30 Shannon Bugos / Kingston Reif, "Understanding Hypersonic Weapons: Managing the Allure and the Risks," *Arms Control Association*, September 2021.
- 31 Richard H. Speier / George Nacouzi / Carrie Lee et al., *Hypersonic Missile Nonproliferation: Hindering the Spread of a New Class of Weapons* (Santa Monica, CA: RAND Corporation, 2017).
- 32 Tracy/Wright, *Modelling the Performance of Hypersonic Boost-Glide Missiles*.
- 33 Jeffrey Lewis / Aaron Stein, "North Korea's MARV," *Arms Control Wonk*, 08.01.2022.
- 34 Brockmann / Schiller, *A matter of speed?*
- 35 Dominika Kunertova, "Hypersonic Weapons: Fast, Furious... and Futile?" *RUSI Newsbrief*, 15.10.2021.
- 36 Nathan B. Terry / Paige Price Cone, "Hypersonic Technology: An Evolution in Nuclear Weapons?" *Strategic Studies Quarterly* 14:2 (2020), 74–99.
- 37 Dean Wilkening, "Hypersonic Weapons and Strategic Stability," *Survival* 61:5 (2019), 129–148.
- 38 Shaan Shaikh, "China's Hypersonic Future," *CSIS Missile Defense Project: Missile Threat*, 12.12.2021.
- 39 Wright, *Is China gliding towards a FOBS capability?*
- 40 Bugos/Reif, *Understanding Hypersonic Weapons*.
- 41 Shaikh, *China's Hypersonic Future*.
- 42 Williamson/Wirtz, *Hypersonic or Just Hype?*
- 43 Karako/Dahlgren, *Complex Air Defense*, 2.
- 44 Lawrence Freedman, *The Future of War: A History* (New York: PublicAffairs, 2017), 278.

CHAPTER 3

Transatlantic Security and the Future of Nuclear Arms Control

Névine Schepers

Russia's war in Ukraine has significantly dimmed prospects for nuclear arms control while highlighting the risks of nuclear use. With the complete overhaul of Europe's security architecture at play, arms control – particularly in the form of risk reduction measures – remains an essential political tool to prevent nuclear escalation. It can also balance the conflicting demands of strengthening deterrence and the pursuit of disarmament objectives, particularly in Europe.



An unarmed Minuteman III ICBM launches during a developmental test on 5 February 2020 at Vandenberg Air Force Base in California, United States. *Clayton Wear / US Air Force*



Nearly 60 years after the Cuban Missile Crisis, the world again faces a heightened risk of nuclear exchange as the war in Ukraine continues to unfold. Russian President Vladimir Putin has engaged in nuclear saber-rattling by threatening a nuclear response should NATO as an alliance or its individual member states intervene in Ukraine. Putin has also ordered an increase in staffing at nuclear command centers and opened the possibility of deploying Russian nuclear capabilities in neighboring Belarus.¹ Russia's full-scale military invasion of an independent sovereign nation has completely upended Europe's security environment, with far-reaching human, political, economic, and military consequences for the decades ahead. The war's outcome remains uncertain as of the writing of this chapter in late March 2022. However, it is no exaggeration to say that the events of early 2022 will be profoundly destabilizing on a global scale. This chapter will focus on the implications and prospects for nuclear arms control from a transatlantic perspective.

The nuclear dimension of Russia's conflict with Ukraine is ubiquitous, and the risk of escalation, inadvertent or intentional, cannot be ruled out. In its invasion of a non-nuclear weapon state, Russia is practicing nuclear blackmail by using fears of nuclear

escalation to deter against the military involvement of NATO and its member states. Russia's actions undermine the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), damage decades of arms control work at both the bilateral and multilateral levels, and jeopardize the prospects for nuclear disarmament, non-proliferation, and arms control. Arms control alone cannot address this war when what is at stake is a complete overhaul of the European security architecture and when Russia disregards international rules, conventions, and norms in pursuing its invasion of Ukraine. Yet, arms control tools cannot be disregarded completely and may well form part of a solution.

As defined by Thomas Schelling and Morton Halperin, arms control includes "all the forms of military cooperation between potential enemies in the interest of reducing the likelihood of war, its scope and violence if it occurs, and the political and economic costs of being prepared for it."² Despite early hopes to the contrary, Putin did not genuinely contemplate efforts to avoid war in Ukraine, such as by reaching a potential compromise that could have included arms control measures on intermediate-range missile deployments. Such measures may still resurface as part of an end-of-war agreement. They may also form an



element of a separate track given the need to continue addressing the large US and Russian arsenals and to avoid the potential for nuclear escalation. Precedents for negotiating nuclear arms control once a war has begun are difficult to compare with the situation today. Throughout the Cold War, bilateral arms control negotiations persisted and even achieved breakthroughs despite acts of military aggression. However, the lessons learned from these negotiations cannot be easily transposed to the current crisis. The nuclear dimension in today's war is interlinked with additional political, military, and economic elements.

Arms control is an essential political tool to prevent nuclear war; without it, the world would become an even more dangerous place. Arms control measures could be used to reach a compromise in the short term, to maintain some controls on nuclear arsenals in the medium term, or to reduce the nuclear risks this war will amplify in the long term, although these are not limited to Europe. As events continue to unfold at a dramatic pace in Ukraine, it is difficult to determine the likelihood that arms control measures could be agreed on, and if so, in which possible format. However, it is a necessary exercise to think through the challenges for which arms control solutions will be required and how the

United States and its European allies can develop a consistent transatlantic approach to address them.

A coordinated and complementary transatlantic approach to arms control is important. This is because of US and European resources and capabilities in this domain and the impact that a joint approach can have in addressing European security threats as well as nuclear risks at a global level. Russia's aggression has brought about a renewed sense of unity within NATO and triggered improved transatlantic coordination. Sustaining this cohesion throughout and beyond the current crisis will be key for improving European security, including when looking for de-escalation pathways, which could involve arms control measures. The altered security environment in Europe is also bound to have an impact on upcoming strategic decisions, visions for the future, and long-term plans. It will affect two key documents which are scheduled for release in 2022: the US Nuclear Posture Review, which will lay out priorities and guidelines for US nuclear policy, and NATO's Strategic Concept, which concerns NATO's broader political and military adaptation. Russia's war in Ukraine will inevitably lead to a reassessment of these and other issues, including ambitions for arms control and disarmament.

The renewal of arms control tools and initiatives should be an important part of this, and this issue should remain a focus for the United States and its allies over the long term.

Transatlantic coordination will also be necessary when addressing strategic relationships significantly affected by China's military rise, including Beijing's position as a nuclear adversary to Washington. Indeed, for several broader arms control efforts to be relevant, China's participation in them will be required. This implies the need for better coordination between the transatlantic and transpacific theaters. Other factors also complicate the development of arms control measures. These include the increasing interlinkages between nuclear and conventional capabilities as well as the fast pace of technological innovation. Few measures have been able to preempt or match these developments and provide pathways for competition management.

A Dramatically Worsened Security Context

Russia's invasion of Ukraine comes after more than a decade of worsening strategic relations and increasing great-power competition. This situation has been enabled by the deconstruction of the post-Cold War architecture, which includes arms control

frameworks. The latter formed important elements of the structure of the European security environment and the US-Russia strategic relationship. However, these arms control frameworks failed to adapt to the new challenges and rising nuclear risks posed by multipolarity – notably the rise of China – and the impact of emerging and disruptive technologies on strategic stability. Pathways for progress and efforts to address these challenges were offered by several developments. These included the investments by experts and governments in new thinking and methods in the last several years as well as a renewed political emphasis on arms control.³ However, the situation may now have changed.

US President Joe Biden's administration emphasized the revival of arms control when it came into office. This was underlined by its immediate initiative to extend, in coordination with Russia, the New Strategic Arms Reduction Treaty (New START). This emphasis by the administration also offered some hope for positive developments in arms control, something additionally supported by its ambitions for rebuilding alliance relationships. A joint statement by the five permanent members of the UN Security Council (P5) – the nuclear-weapon states recognized by the NPT



Developments Affecting Arms Control



Treaties and agreements

- 1 New START (Strategic Arms Reduction Treaty) comes into force
- 2 Treaty on the Prohibition of Nuclear Weapons (TPNW) opens for signature
- 3 US withdrawal from the Intermediate-Range Nuclear Forces Treaty (INF)
- 4 US withdrawal from the Open Skies Treaty
- 5 TPNW comes into force
- 6 New START extension
- 7 Russian withdrawal from the Open Skies Treaty

Nuclear doctrine and posture

- 1 NATO Strategic Concept 2010
- 2 US Nuclear Posture Review 2018
- 3 P5 Joint Statement on preventing nuclear war
- 4 US Nuclear Posture Review 2022 (*expected*)
- 5 NATO Strategic Concept 2022 (*expected*)

Events

- 1 Russian annexation of Crimea
- 2 President Trump takes office
- 3 President Biden takes office
- 4 Russia starts amassing troops at the Ukrainian border
- 5 Russian invasion of Ukraine begins

– that “a nuclear war cannot be won and must never be fought” seemed to lay the groundwork for increased and much-needed cooperation on nuclear risk reduction.⁴ However, it only took a few weeks for these declarations to

ring hollow given the nuclear threats articulated by Putin. Many arms control proposals presumed a working, albeit difficult, relationship between Washington and Moscow as a basis for further measures. Russia’s invasion



of Ukraine has changed the situation drastically and broken decades of carefully cultivated relationships and engagement.

Within days of the full-scale invasion of Ukraine, the US-Russia Strategic Stability Dialogue was put on hold. This format was initially reinstated after the Putin-Biden summit in Geneva in June 2021 to open negotiations for a follow-on treaty to New START. This is the only remaining treaty limiting US and Russian strategic nuclear weapons and their means of delivery, and it remains in force until 2026. The halt to the main forum for discussing limits to nuclear arsenals as well other risks to strategic stability underscores the gravity of the situation. It also denies Moscow the opportunity to be seen as negotiating on something perceivable as equal terms with Washington while it wages a war in a neighboring country.

Under the current circumstances, it does not seem feasible that the United States and Russia could negotiate a treaty. Russia's months-long build-up of troops at the border with Ukraine ultimately suggests that Moscow could not have been swayed from its decision to invade. Indeed, any Russian diplomatic engagement in the run-up to the invasion, including potential arms control offers, may have been a façade.

It is unlikely that the US Senate will ratify a treaty with Russia in the near future given current events. The present situation only adds to concerns about past acts of Russian non-compliance such as the deployment of a prohibited missile that caused the collapse of the Intermediate-Range Nuclear Forces (INF) Treaty. Yet the nuclear arsenals at stake remain enormous, and discussions under the strategic stability dialogue only started to address issues beyond maintaining New START restrictions. Before the United States halted the talks, Washington's priorities were focused on limiting new kinds of intercontinental-range delivery systems such as the new strategic weapons that Russia has been developing and deploying. They also focused on integrating non-strategic warheads in any kind of agreement, as Russia retains a vastly superior arsenal of such weapons.⁵ These non-strategic warheads, so-called tactical nuclear weapons, refer to weapons designed for use in battlefield situations and which have a shorter range. Russia has nearly 2,000 of these. Their large number, exclusion from past and present treaties, and the lack of transparency regarding their role have long been an issue in US-Russian nuclear negotiations.⁶

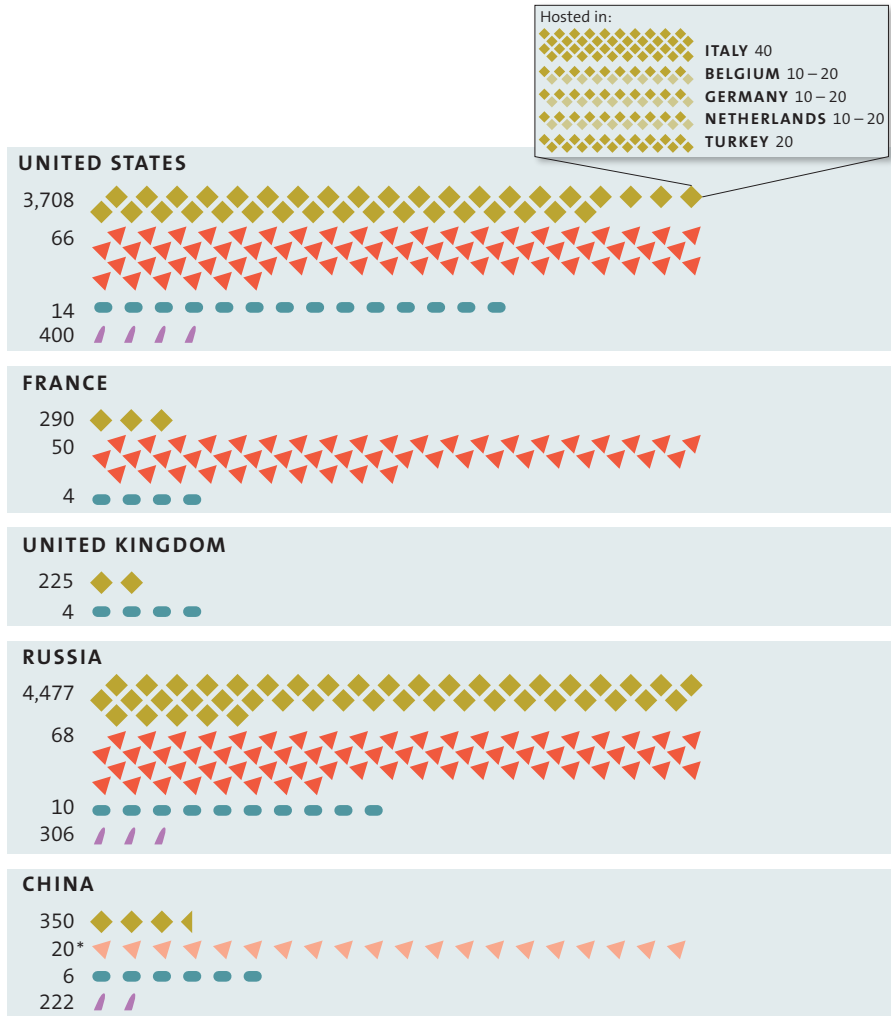
In contrast, Russian priorities centered mainly on missile defense and



NPT Nuclear Weapon States' Capabilities

Approximated

- ◆ 100 Nuclear warheads, strategic and non-strategic (incl. reserves, excl. retired warheads)
- ▲ Nuclear-capable aircraft
- Ballistic missile submarine (SSBN)
- ▮ 100 Intercontinental Ballistic Missiles (ICBM)



Note: Short- and intermediate-range ballistic missiles as well as nuclear-capable cruise missiles are not shown on this graph.

* The Chinese People's Liberation Army Air Force has been re-assigned a nuclear mission since 2018. However, the number of aircraft assigned to that mission is unclear.

Source: Federation of American Scientists, SIPRI, Fondation pour la Recherche Stratégique



were framed around a “new security equation approach” that would include all weapons, both offensive and defensive, affecting strategic stability. Russian concerns also included non-nuclear high-precision strike weapons and space-related capabilities. In draft treaties that it sent to the United States and NATO in December 2021, Russia stressed its desire for an end to NATO nuclear sharing agreements and a ban on short- and medium-range missile deployments.⁷ Neither treaty proposal offered realistic options for engagement in negotiations, and both are now void. However, US responses initially envisioned potential discussions about an arms control agreement. Such discussions would have addressed the gap left by the defunct INF Treaty by placing limits on ground-based intermediate- and shorter-range missiles and their launchers, as well as reciprocal transparency mechanisms at NATO missile defense sites and selected Russian missile bases.⁸ While such discussions are off the table for now, they may resurface depending on how Russia’s aggression against Ukraine ends.

Other Challenges to Arms Control

The end of the INF Treaty, while rooted in Russian non-compliance, also reflected US concerns regarding China. China’s nuclear arsenal and range of systems, including ground-launched

intermediate-range missiles, have steadily expanded. This development was spurred on by Chinese President Xi Jinping’s call to “accelerate the construction of advanced strategic deterrent” capabilities.⁹ Thus, China’s inclusion in arms control negotiations reflects a key challenge for the future of nuclear arms control. Indeed, this challenge appeared to be the dominant one facing arms control prior to the events in Ukraine. It may now prove more difficult to address.

Beyond the modernization of its nuclear forces, Beijing is constructing hundreds of new ballistic missile silos, developing and deploying dual-capable missiles, and diversifying its nuclear delivery platforms. China is also reportedly increasing its stockpile of nuclear warheads.¹⁰ These developments, coming from a state that has traditionally emphasized a minimalist nuclear posture, are concerning for the United States and its allies in the Pacific. This is particularly the case given the lack of transparency regarding China’s nuclear capabilities and the absence of relevant crisis management mechanisms or comprehensive strategic dialogue. Moreover, China’s aggressive rhetoric toward Taiwan creates fears that a conflict over the island could include a nuclear dimension should a conventional conflict with the United States escalate.



Developing arms control measures that include China has become even more difficult now given the increased public alignment between China and Russia. While China has been cautious in its reaction to Russia's invasion of Ukraine, both states have sought to strengthen their partnership. For example, this was reflected in a joint statement delivered in early February 2022, in which Beijing adopted Russia's language opposing NATO enlargement and both countries called for Washington to agree to Moscow's proposal for a moratorium on intermediate-range missiles in Europe.¹¹ This latter proposal effectively dismissed any initiatives that would seek to broaden negotiations on such missiles to include China. The statement also called for the withdrawal of US nuclear weapons stationed in Europe; pressed for the termination of missile defense systems; and denounced the trilateral security partnership formed by Australia, the United Kingdom, and the United States (AUKUS) as something that increases the chances of nuclear proliferation and a regional arms race in the Asia-Pacific.

Russia and China's increased mutual support for each other's key positions in the areas of arms control, non-proliferation, and disarmament may complicate US attempts to develop a separate bilateral strategic stability dialogue

with China. For now, such a dialogue is only under consideration by Beijing.¹² Regardless, Sino-Russian cooperation will require US allies in Europe and in the Asia-Pacific to improve coordination with one another. China has long stated that it will not join arms control discussions until the United States reduces its nuclear arsenal to the size of China's.¹³ With the US-Russia Strategic Stability Dialogue talks halted for an undetermined amount of time, China may continue to use this argument as a shield to avoid deeper discussions on nuclear capabilities. However, nuclear escalation risks highlighted by the war in Ukraine may open more space for engagement on crisis management and risk reduction measures with China. These are areas to which the United States and its allies in Europe and the Asia-Pacific can all make contributions.

Finally, debates regarding the future of arms control have increasingly turned to the potential impact of emerging and disruptive technologies on strategic stability and nuclear forces. This has involved an examination of how to integrate such technologies in arms control solutions. These non-nuclear technologies include dual-use capabilities developed in the fields of Artificial Intelligence (AI), space, robotics, and cyber. They also include conventional military technologies such as missile



defense systems and precision-guided weapons. Few measures exist beyond some export control mechanisms to limit most of these technologies, and none are currently in place to address their impact on nuclear risk.

Revived Transatlantic and European Unity

Russia's invasion of Ukraine has been met with a swift and collective NATO response and a united transatlantic front. Prior concerns about US commitment to European security or French aloofness from NATO have been dispelled for now.

There has been a striking change in the tone of transatlantic relations since the invasion. Only a few months before the war in Ukraine, the Biden administration was under fire for its failure to coordinate with its allies on issues including the withdrawal from Afghanistan and the diplomatic mismanagement surrounding the creation of AUKUS. The state of transatlantic unity has also set aside debates surrounding a potential adoption by the United States of a sole purpose policy, which was under consideration for inclusion in the 2022 Nuclear Posture Review. The suggested policy reflected Biden's ambition to reduce the role of nuclear weapons in US defense strategy. More specifically, the policy would state that the sole purpose of

US nuclear weapons is to deter and, if necessary, respond to a nuclear attack against the United States or its allies. The language of this suggested policy was met with pushback given fears among European and Asian allies. They were concerned that if adopted, the policy could weaken deterrence, undermine security guarantees, and encourage nuclear-armed adversaries to engage in non-nuclear aggression.¹⁴ These concerns have only become more acute since Russia embarked on its military invasion of Ukraine, making it unlikely that the United States will adopt a sole purpose policy any time in the foreseeable future.

At a political level, the EU has displayed surprising levels of unity and speed by agreeing on exhaustive sanctions, aid packages, and a response to the Ukraine refugee crisis. The crisis has highlighted improved coordination at the European level, particularly through the Weimar Triangle format that brings together France, Germany, and Poland.¹⁵ The situation is similar at the transatlantic level, which notably featured constant communication among French President Emmanuel Macron, German Chancellor Olaf Scholz, and Biden.

The crisis has also called attention to the renewed leadership from Berlin and Paris. For instance, Berlin's



decision to increase defense spending significantly and its agreement to deliver arms to Ukraine have upended decades of foreign and defense policy. Other notable developments from Germany involve a renewed commitment to NATO nuclear sharing – which already featured in the new government’s coalition agreement – and the decision to purchase US F-35 fighter jets, which were also selected previously by other nuclear sharing states such as Belgium, Italy, and the Netherlands.¹⁶

French actions during this crisis, including those within NATO and through its maintenance of communication channels with Putin, may help to set aside concerns that France would give preference to European strategic autonomy at NATO’s expense. In the past, France’s attempts to push for Euro-centric defense initiatives and sovereignty have often aroused concerns among other European NATO states that this could weaken the transatlantic alliance and cohesion. However, in response to Putin’s nuclear saber-rattling, French Foreign Minister Jean-Yves Le Drian raised the fact that NATO is a nuclear alliance.¹⁷ Given that France does not take part in NATO nuclear planning and sharing arrangements, this sent a strong signal that there is full alignment between the deterrence positions of France and NATO. This development may

also lead, in time, to further discussions on closer coordination between France and NATO on nuclear planning and sharing arrangements or a broadened role for the French nuclear deterrent in European security.

The war in Ukraine will have significant implications for Europe, including Russia. They will involve the role that nuclear weapons, deterrence, and arms control play in the crisis. In order to consider these implications and what they will mean for regional and global security, the transatlantic community will need to remain unified.

Reinforcing Deterrence and Disarmament Trends

In Europe, two trends were apparent before the Russian invasion of Ukraine: increasing support for nuclear deterrence and further pressure for nuclear disarmament. Both trends are likely to be reinforced by the war and the prevalent role played by nuclear weapons in the conflict.

The first trend has been more apparent in Central and Eastern European states, which have long sought to strengthen NATO’s deterrence posture in light of weaknesses in their conventional forces and Russian assertiveness. As the latter has morphed into a full-scale war on NATO’s borders, the threat of conflict is at its



highest level since the end of the Cold War. The necessary response for most allies – and particularly those in the East such as Poland, Lithuania, Latvia, and Estonia – will be to enhance both conventional and nuclear deterrence. Given that Eastern European concerns about Russia have been proven right, NATO's upcoming Strategic Concept will need to reflect a strengthened deterrence posture.

Deployments of US INF-range conventional missiles to Europe may no longer be as contentious as they once were. Such deployments were already being debated prior to Russia's invasion of Ukraine, although more prominently in the Asia-Pacific theater. They were also considered to be a way to close the deterrence gap with Russia, as well as potential bargaining leverage.¹⁸ However, deployments of such missiles to Europe would inevitably entail increased escalation risks, as Moscow would view them as a grave threat. An escalatory Russian response may involve the deployment of Russian nuclear weapons in Belarusian territory, which is now possible following the recent change in the constitution of Belarus.¹⁹

Moscow's war in Ukraine will make arms control even more politically difficult, as NATO allies will likely face internal disagreements on which

compromises are possible. Any action or signal that could be interpreted as undermining the credibility of deterrence could become contentious. At the same time, enhancing deterrence without any arms control mechanisms in place poses risks to stability. Increasing the salience of nuclear weapons and deterrence, given the risks of nuclear escalation, could also heighten anti-nuclear sentiment among European publics.

This leads to the second trend: stronger support for nuclear disarmament. Given the terrifying ease with which Putin has raised the possibility of nuclear weapon use, European and global publics are understandably concerned. In the last decade, European public debates on nuclear issues have varied significantly from country to country, often depending on world events or the political makeup of coalition-based governments. Many NATO states are generally content not to engage with their constituents on thorny issues such as nuclear hosting or dependence on extended deterrence. However, recent events are shining a light on the devastating consequences of any form of nuclear use. These include renewed fears of nuclear war and concerns that Putin could break the taboo of nuclear use in a "limited" manner by using nuclear weapons on Ukrainian territory.



Moreover, given the risks of nuclear escalation, the United States and NATO ruled out direct military responses to the war in Ukraine early on, limiting their scope of action. This has highlighted the role that nuclear coercion can play as a tool and the impunity with which Russia has been able to pursue a conventional war while using nuclear deterrence as a shield.

Prior to the war, hopes for progress on nuclear disarmament were already fading. This position has also been reinforced by the fact that all nuclear powers have undertaken long-term nuclear modernization programs. Such developments have further polarized states party to the NPT, with nuclear weapon states and those that benefit from their protection becoming increasingly divided from the treaty's other members. Disillusionment with the lack of progress on disarmament has led to a strengthening of the nuclear abolitionist movement. This is structured around the Treaty on the Prohibition of Nuclear Weapons (TPNW), which entered into force in January 2021. In Europe, divisive and heated public discussions surrounding the TPNW continue. In part, the nature of this debate results from how treaty proponents take aim at the practice of nuclear deterrence and consequently increase pressure on NATO states.²⁰ Popular support for the TPNW, or at least the ideals it aspires

to, has been growing. This has been illustrated by commitments by political parties and local governments to the treaty as well as debates regarding potential accession in national parliaments. Civil society organizations that support the TPNW are now seizing upon Putin's nuclear threats and the prospect of potential new missile deployments. They suggest these developments clearly demonstrate why states should sign the treaty.²¹

The war will likely continue to emphasize these different interpretations of the value and risks posed by deterrence and nuclear weapon possession. Yet, in the absence of significant commitments by Russia as well as China to arms control and disarmament objectives, the TPNW makes little sense for NATO states. Indeed, they perceive their membership in the nuclear alliance as a bulwark against Russian aggression. Still, addressing the deterrence and disarmament debates will be essential given the catastrophic consequences that any form of nuclear use would generate. Moscow's doubling down on nuclear coercion as a seemingly viable strategy requires the transatlantic community to reassess how to address such threats.

The repercussions of Russia's actions on the NPT regime should also not be underestimated. By invading Ukraine,



Russia has blatantly violated the 1994 Budapest Memorandum. Under this agreement, Ukraine, as well as Belarus and Kazakhstan, acceded to the NPT as a non-nuclear weapon state after transferring nuclear weapons – inherited after the break-up of the Soviet Union – to Russia. In exchange, Russia, the United Kingdom, and the United States provided Ukraine with security assurances, including to respect its independence and sovereignty. Russia's invasion of Ukraine, a non-nuclear weapon state, and its nuclear threats to deter others from intervening have cast a dark shadow on the NPT regime, including its two-tiered system.

A Shrinking Space for Arms Control

The opposing trends that show shifts toward strengthening deterrence and calls for disarmament leave little space for arms control. Despite arms control's adaptation challenge, de-escalation pathways remain necessary in the near term, as do crisis management and communication tools. In the long term, the war in Ukraine also highlights the need for more arms control, better prevention mechanisms, and reduced incentives for escalation. Opportunities for developing these will depend on the outcome of the war for Ukraine, the evolution of Europe's security architecture, possible compromises reached with Moscow, and the fate of Russia as its war in Ukraine unfolds.

At the transatlantic level, NATO is the traditional forum for discussions on arms control. It will also likely remain so, providing an important institutional framework for discussion and coordination on arms control positions, whether conventional or nuclear, through different consultative bodies. Historically, NATO's approach to arms control has been defined by two key moments. The first was the publishing of the 1967 Harmel Report, which formally endorsed a "two-track" policy of deterrence and détente. The second was the 1979 "dual-track decision," which took place during a period of high tensions with the Soviet Union. This decision involved NATO committing not only to arms control engagement efforts but also the modernization of its deployed intermediate-range missile forces, with the possibility in mind that the negotiations could fail. The latter eventually led to the negotiation and signing of the INF Treaty. The current crisis will become the next defining moment for the alliance, including in terms of how it will seek to approach arms control.

Balancing deterrence with arms control is a constant political and military exercise within NATO, although the scales have often tipped toward emphasizing deterrence. This is likely to be the case for the coming months



and years as well given Russia's actions. The continuation of a dual-track approach seems no longer feasible for now, yet arms control should not be dismissed. Nor should it be used as the rhetorical box ticking exercise it has sometimes become in efforts to balance against increased references to strengthening deterrence. An over-reliance on deterrence presents risks and few opportunities for negotiating with Russia. Such negotiations remain necessary given Europe's geography and the responsibility states have to prevent nuclear war. These cannot be guaranteed by deterrence alone. Without mechanisms for dialogue and restraint, instability will remain and will become impossible to manage.

NATO can also pursue arms control objectives in other ways. For instance, it has a role to play as a repository for historical arms control knowledge, especially in Europe. Initiatives for emerging experts and the research work provided by NATO Defense College are among the ways that it furthers this goal. NATO has also developed expertise on emerging and disruptive technologies and their potential impact on military forces. These technologies pose numerous nuclear risks. Thus, addressing their impact on nuclear deterrence is a major area of research on both sides of the Atlantic. Tackling the possible impact

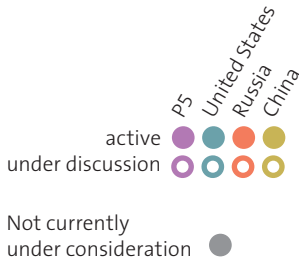
of such technologies on deterrence is also at the heart of efforts to adapt arms control. NATO currently focuses on promoting the development of dual-use technologies to "strengthen the Alliance's edge" and on exchanging best practices to protect its member states against threats.²² Most technology areas prioritized by NATO, such as AI, autonomy, hypersonic technologies, and space, are also relevant for deterrence and arms control. Given its weight, resources, and reach, NATO could further focus on exploring these technologies from the perspective of arms control as well.²³

Risk Reduction as a Pathway Forward

The war in Ukraine has dashed hopes for achieving formal arms control agreements in the foreseeable future. It has also emphasized the urgent need for more effective risk reduction measures. The purpose of such measures is to reduce the risk of intentional or unintentional nuclear weapon use. These measures focus on elements such as declaratory policy; improving mutual understanding and transparency; establishing crisis management and communication tools; and taking preventive measures to decrease the likelihood of accidental use.²⁴ While they often take the form of political commitments rather than legally binding frameworks,



Examples of Nuclear Risk Reduction Measures



DECLARATORY POLICY

"A nuclear war cannot be won and must never be fought."



No First Use policy



Negative security assurances

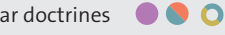


MUTUAL UNDERSTANDING

Glossary of nuclear terms



Dialogue on nuclear doctrines



CRISIS COMMUNICATION

Hotline agreement



Nuclear risk reduction center



Military-to-military dialogue



TRANSPARENCY

Reporting to the NPT Review Conference



Ballistic missile launch notification



OPERATIONS

De-alerting nuclear weapons



De-targeting nuclear weapons



RESTRAINT

Prohibiting kinetic or cyber attacks on nuclear command and control systems



Increased security of launching systems



Sources: UNIDIR, European Leadership Network, Clingendael

these measures still form an integral part of arms control. They have been increasingly highlighted as a pathway forward given existing challenges.

An inherent issue for risk reduction is that states have different interpretations

of what constitutes risk. A source of risk for one state can be perceived as the solution for alleviating risk for another. A measure to reduce risk for one state may increase risk for another. Missile defense systems are representative of this dilemma. Given



the current context regarding the war in Ukraine, risk reduction measures aimed at improving transparency and communication should be a priority for the United States, NATO and its member states, and Russia, as should raising the threshold for nuclear use. Hotlines exist between the United States and Russia as well as between NATO and Russia. There is also the US-Russian Nuclear Risk Reduction Center. Ensuring that these instruments remain up to the task in the context of a Russian war with a country that neighbors NATO states should be a priority. A related priority for the United States here would be the building of these tools with China, given that few currently exist.

Discussion and coordination formats such as the Stockholm Initiative and the P5 process have increasingly focused on nuclear risk reduction measures. The Stockholm Initiative notably brings together 16 non-nuclear weapon states from different groupings. These states include US allies such as Germany, the Netherlands, South Korea, and Japan; non-aligned states like Switzerland; and TPNW member states including New Zealand and Mexico. The initiative coordinated a nuclear risk reduction package for review and adoption at the upcoming NPT Review Conference, which would anchor the development and

implementation of risk reduction measures as a process within the NPT regime.²⁵ The P5 process also started discussing risk reduction, particularly after the format was revived in 2018. It has served as one of the few forums for engagement among NPT nuclear weapon states, and it has helped to foster discussion on nuclear policy and doctrines, particularly with China.

The war in Ukraine will have a detrimental impact on the NPT regime, which was already under stress from many sources. The future of the P5 process is uncertain, as the space for diplomacy with Russia in most other multilateral forums continues to shrink. Most risk reduction measures require P5 implementation. However, others could also involve NATO states to a certain extent, notably including some measures which fit under the scope of improving mutual understanding. Nuclear risk reduction is mainly the responsibility of nuclear-weapon states, yet their failure to reduce risk has consequences for everyone. This point has been strongly underlined by debates surrounding the potential use of nuclear weapons in the war in Ukraine. Polarization between states supporting disarmament and deterrence will likely increase as a consequence of the conflict in Ukraine, creating a further need for constructive engagement



between both communities. Exchanges between nuclear weapon states and non-nuclear weapon states could support the development of effective risk reduction mechanisms with broader international endorsement. This would especially be the case for states that are invested in risk-reduction progress and that attempt to work as bridge-builders between more skeptical pro-disarmament states on the one hand and nuclear weapon states and their allies on the other. While the TPNW's approach to disarmament is at odds with NATO's deterrence policies, such arms control measures offer some middle ground in what is often an otherwise inflexible debate.

It will be difficult to ensure that most forums for engagement and negotiation remain fit for purpose and that they will be structured in a way that can deliver results. The breakdown in US-Russia relations creates further complications, with multilateral forums such as the NPT Review Conference, the Organization for Security and Cooperation in Europe (OSCE), and the Organisation for the Prohibition of Chemical Weapons at risk of being held hostage to developments in Ukraine. Nuclear arms control depends to an even greater degree on the health of relations between Washington and Moscow. Thus, the adaptation and multilateralization of related processes

to increase the inclusion of China and address the impact of emerging and disruptive technologies is presently becoming more challenging.

Nuclear arms control has no dedicated multilateral forum in the way that non-proliferation does with the NPT or conventional arms control does with the OSCE. To contribute effectively to nuclear arms control, states need to undertake efforts to coordinate among different forums and to maintain the necessary national infrastructure that can support arms control efforts. Therefore, the development of a transatlantic approach to arms control also has to start in national capitals, by further investing in the supporting arms control infrastructure. This includes the intellectual capital, engagement mechanisms, and institutional frameworks that contribute to the generation and implementation of ideas.²⁶ This is not just the purview of Washington, Paris, or Berlin. Instead, it should be a responsibility for all states that have a role in contributing to European security, something which has gained even greater significance following the invasion of Ukraine.

A Somber Outlook

Russia's war in Ukraine has upended the post-Cold War security order in a definitive and irreversible manner. It



already has had, and will continue to have, devastating consequences at multiple levels that will last for years. Its negative impact on the future of arms control and the impetus that it provides for future arms races are but two terrible repercussions of Putin's decision to invade. The nuclear dimension of this conflict will also inevitably lead to greater debates about the utility, use, and risks of nuclear weapons and deterrence, especially when these are unrestricted by arms control. While arms control agreements may be out of reach for now, nuclear risk reduction can perhaps lessen some of the more extreme threats. It may also be considered as a way to address issues of transparency and misperception involving China's nuclear forces. This will all require the United States and European nations to continue to coordinate and invest in arms control solutions.

- 1 Caitlin Talmadge, "The Ukraine Crisis is Now a Nuclear Crisis," *Washington Post*, 27.02.2022.
- 2 Thomas C. Schelling / Morton H. Halperin, *Strategy and Arms Control* (New York: Twentieth Century Fund, 1961).
- 3 See for instance: Liana Fix / Christoph Heimeier / Ulrich Kühn, "Towards a Common, Peaceful and Safe Future," *Körber-Stiftung*, April 2021; James M. Acton / Thomas MacDonald / Pranay Vaddi, "Reimagining Nuclear Arms Control: A Comprehensive Approach," *Carnegie Endowment for International Peace*, 16.12.2021; Anna Péczeli / Brad Roberts / Jonas Schneider et al., "Redesigning Nuclear Arms Control for New Realities," *CSS Policy Perspectives* 9:8 (2021).
- 4 P5, "Joint Statement of the Leaders of the Five Nuclear-Weapon States on Preventing Nuclear War and Avoiding Arms Races," *whitehouse.gov*, 03.01.2022.
- 5 Shannon Bugos, "US, Russia Establish Strategic Stability Groups," *Arms Control Today*, November 2021.
- 6 Hans M. Kristensen / Matt Korda, "Russian Nuclear Weapons, 2022," *Bulletin of the Atomic Scientists* 78:2 (2022); Hans M. Kristensen / Matt Korda, "Tactical Nuclear Weapons, 2019," *Bulletin of the Atomic Scientists* 75:5 (2019).
- 7 Ministry of Foreign Affairs of the Russian Federation, "Treaty between the United States of America and the Russian Federation on Security Guarantees," *mid.ru*, 17.12.2021; Ministry of Foreign Affairs of the Russian Federation, "Agreement on Measures to Ensure the Security of the Russian Federation and Member States of the North Atlantic Treaty Organization," *mid.ru*, 14.02.2022.
- 8 Leaked responses by NATO and the United States to Russian treaty proposals, quoted in Amanda Mars / Bernardo De Miguel „Estados Unidos y la OTAN rechazan la reclamación de Rusia de frenar la ampliación de la Alianza," *El País*, 26.01.2022
- 9 Tong Zhao, "What's Driving China's Nuclear Buildup?," *Carnegie Endowment for International Peace*, 05.08.2021.
- 10 Hans M. Kristensen / Matt Korda, "Nuclear Notebook: Chinese Nuclear Forces, 2021," *The Bulletin of Atomic Scientists*, 77:6 (2021); US Department of Defense, "Military and Security Developments Involving the People's Republic of China 2021," Annual Report to Congress, November 2021.
- 11 The Kremlin, "Joint Statement of the Russian Federation and the People's Republic of China on the International Relations Entering a New Era and the Global Sustainable Development," *kremlin.ru*, 04.02.2022.
- 12 David E. Sanger / William J. Broad, "As China Speeds Up Nuclear Arms Race, the US Wants to Talk," *New York Times*, 28.11.2021.



- 13 Ministry of Foreign Affairs of the People's Republic of China, "Director-General of the Department of Arms Control of the Foreign Ministry Fu Cong Interviewed by the Russian Newspaper Kommersant," www.fmprc.gov.cn, 15.10.2020.
- 14 Robert Einhorn, "No First Use of Nuclear Weapons is Still a Bridge Too Far, But Biden Can Make Progress Toward that Goal," *Brookings Institution*, October 2021.
- 15 Federal Foreign Office of Germany, "Joint Declaration by the Ministers of Foreign Affairs Zbigniew Rau (Poland), Annalena Baerbock (Germany), and Jean-Yves Le Drian (France) on Ukraine," auswaertiges-amt.de, 01.03.2022.
- 16 Peter Hille, "F-35: Why Germany Is Opting for the US-made Stealth Fighter Jet," *Deutsche Welle*, 16.03.2022.
- 17 Geert de Clercq, "France Says Putin Needs to Understand NATO Has Nuclear Weapons," *Reuters*, 24.02.2022.
- 18 Luis Simon / Alexander Lanoszka, "The Post-INF European Missile Balance: Thinking about NATO's Deterrence Strategy," *Texas National Security Review* 3:3 (2020).
- 19 William Alberque, "Belarus Seeks to Amend Its Constitution to Host Russian Nuclear Weapons," *International Institute for Strategic Studies*, 04.02.2022.
- 20 Névine Schepers, "Europe and the Nuclear Ban Treaty," *CSS Analyses in Security Policy* 286 (June 2021).
- 21 Beatrice Fihn, "Putin's Nuclear Option," *Politico*, 24.02.2022.
- 22 NATO, "Emerging and Disruptive Technologies," nato.int, 22.10.2021.
- 23 Rose Gottemoeller / Steven Hill, "NATO's Current and Future Support for Arms Control, Disarmament and Non-proliferation," *Istituto Affari Internazionale*, December 2020.
- 24 For extensive work on nuclear risk reduction, see: Wilfred Wan, "Nuclear Risk Reduction: The State of Ideas," *United Nations Institute for Disarmament Research (UNIDIR)*, 24.04.2019; Wilfred Wan, "Nuclear Risk Reduction: A Framework for Analysis," *UNIDIR*, 28.06.2019.
- 25 Stockholm Initiative, "A Nuclear Risk Reduction Package," working paper submitted to the Tenth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, 11.05.2021.
- 26 Péczeli et al., *Redesigning Nuclear Arms Control for New Realities*.

CHAPTER 4

Indo-Pacific: The Reconstruction of a Region

Boas Lieberherr and Linda Maduz

The Indo-Pacific represents a new conceptualization of who and what constitutes Asia. Australia, India, Japan, and the United States are its main proponents. The Indian Ocean region and the Asia-Pacific are understood as one contiguous area. Although the new concept's trajectory remains unclear, the transition from the hitherto used "Asia-Pacific" is associated with four overarching trends: a shift from an economy- to a security-dominated agenda, bottom-up to top-down regionalism, multilateralism to minilateralism, and including to excluding China.



On September 24, 2021, US President Joe Biden hosted the first-ever in-person leaders' summit of the "Quad" with the heads of state of India, Australia, and Japan. *Evelyn Hockstein / Reuters*



The Indo-Pacific is a loosely defined and contested idea that spans an extensive and so far fragmented geographic area – the Indian Ocean region and the Asia-Pacific. According to a key Australian strategy paper, the Indian Ocean has replaced the Atlantic as the world's busiest and most strategically significant trade corridor,¹ “making the Indo-Pacific the world's economic and strategic center of gravity.”² In the context of competing ideas of regional order, the Indo-Pacific is increasingly displacing the hitherto common concept of the Asia-Pacific. The 30-year-old Asia-Pacific framework today represents an integrated strategic system, characterized by deep economic interdependencies, multilateral governance structures, and security alliances.³ However, this cannot be said of the Indian Ocean region.

The Indo-Pacific idea has gained traction over the past decade as it has acknowledged ongoing geopolitical shifts in Asia. The seven-decades-long consensus behind the “Pax Americana,” the system of order in Asia dominated by the United States, and the institutional linkages that constituted the Asia-Pacific are eroding. Uncertainties surrounding US leadership in the region and the rise of China are fundamentally changing the region's economic, political, and military balance of power. The Indo-Pacific

represents a regional reconstruction driven by Australia, India, Japan, and the United States that challenges the previous widely shared conceptualization of the Asia-Pacific. India is, for example, a central node of the emerging framework – demonstrating its growing capabilities and its return into the strategic architecture of Asia.

This chapter argues that there are four major shifts associated with the gradual transition from Asia-Pacific to Indo-Pacific. These also reflect the strategic priorities of the new concept's main advocates. First, a geo-strategic logic with a focus on security issues dominates the Indo-Pacific agenda, as opposed to a previously prevalent economic rationale. Second, policymakers, strategists, and government representatives are at the forefront of promoting the Indo-Pacific, whereas the Asia-Pacific has generally been popularized from the bottom up, with a solid ideational foundation in expert communities. Third, proponents of the Indo-Pacific show a growing preference for minilateral as opposed to multilateral solutions, neither building on nor seeking deeper economic and political integration. Fourth, they are also increasingly favoring a regional architecture that excludes or at least opposes China more than was the case in the recent past.



The Indo-Pacific represents a fluid concept whose characteristics and consolidation remain works in progress. The US Free and Open Indo-Pacific (FOIP) strategy attempts to offer an alternative to a China-centric reordering of the region, such as the one suggested by Beijing's large-scale infrastructure development project, the Belt and Road Initiative (BRI). Australia and Japan were the early promoters of the Indo-Pacific (see timeline). They depend on the US military presence in the region for their security. India, a non-US military ally and a nuclear power in its own right, has only been willing to embrace the Indo-Pacific more openly since the significant escalation of border tensions with China in 2020. Hence, the future of the Indo-Pacific framework will depend on the foreign policy trajectory of the United States and its regional partners, on China's behavior, and on whether and how the idea can be institutionalized. Concrete manifestations of the new concept include, among others, the Quadrilateral Security Dialogue (Quad), an informal alliance among Australia, India, Japan, and the United States, and AUKUS, the trilateral security partnership among Australia, the United Kingdom, and the United States.

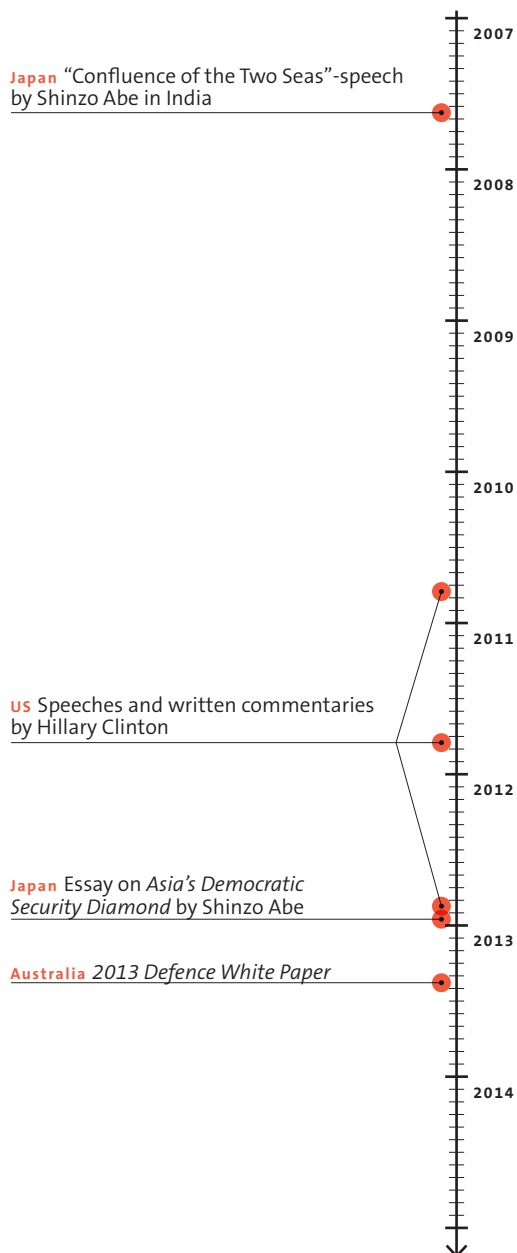
There have been several reactions from other actors, including in Europe, to the emergence of the Indo-Pacific

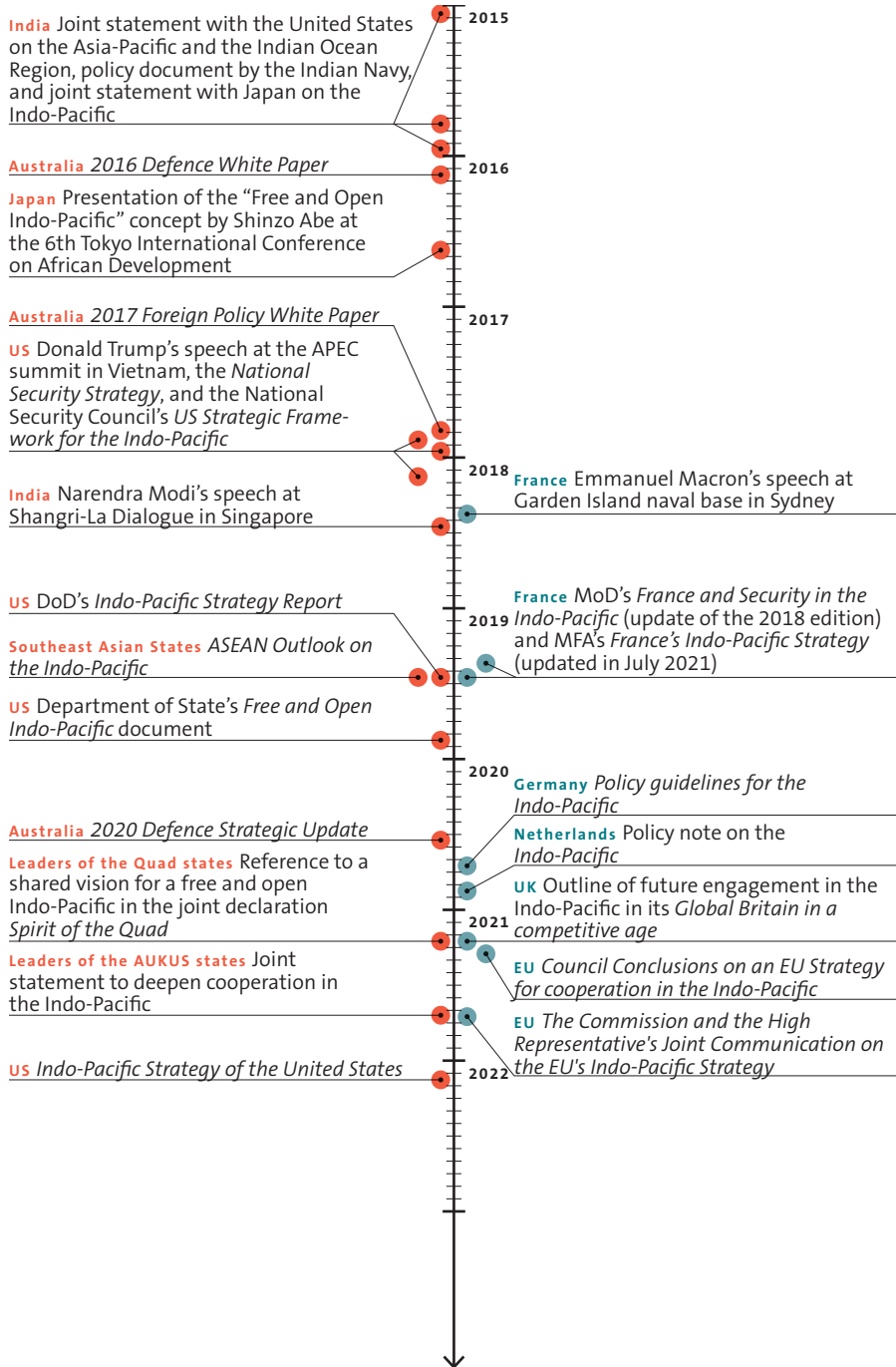
framework. Beijing rejects the concept, perceiving it primarily as a US-led containment strategy directed against China. In 2018, Chinese Foreign Minister Wang Yi compared the Indo-Pacific idea to "sea foam ... [which] may get some attention, but soon will dissipate."⁴ Most Asian countries need to walk a fine line between US pressure to adopt the construct and the vehement opposition by China (and Russia). In 2019, the Association of Southeast Asian Nations (ASEAN) adopted its own Indo-Pacific strategy. In Europe, France (2019), Germany (2020), the Netherlands (2020), and the EU (2021) have embraced the Indo-Pacific, too.

The objective of this chapter is to highlight the structural implications of the transition from the idea of an Asia-Pacific to an Indo-Pacific on Asian regionalism and to illustrate the related ramifications for strategic relations in and with Asia. The chapter first outlines how and why a region – in this case, the Indo-Pacific – is being "reconstructed." It then describes the four major shifts associated with the transition to the Indo-Pacific. What follows is a discussion of how these trends – by creating new obstacles and opportunities – affect the region itself, great-power dynamics, and the form and content of European engagement in Asia.



Key Strategy Documents and References to the Indo-Pacific







Redefining Asia

Geographic concepts such as the Asia-Pacific or Indo-Pacific are socially constructed. The endeavor to create politically defined and organized regions, with institutions being a key manifestation of this attempt, can be described as regionalism.⁵ Based on political and ideological drivers, “mental maps” are formulated to arrive at a vision of regional order.⁶ Former Japanese Prime Minister Shinzo Abe stated in 2007 that “the Pacific and the Indian Oceans are now bringing about a dynamic coupling as seas of freedom and of prosperity” and thereby launched the idea of the Indo-Pacific.⁷ The United States, Australia, and India also subsequently began to incorporate the term into their foreign and security policy language. Instrumental for the concept’s increasing acceptance was former US President Donald Trump’s vision of a “free and open Indo-Pacific” in 2017.⁸ Today, the term Asia-Pacific has been systematically replaced in official Australian, Indian, Japanese, and US documents. The Biden administration has fully adopted the FOIP concept, and it published its own Indo-Pacific strategy in early 2022.

The idea of the Indo-Pacific is more than simply a geographic extension of the Asia-Pacific. It represents a new conceptualization of which countries the region includes (adding the

nations of the Indian Ocean region), where the key hubs of regional power reside (Australia, India, Japan, and the United States), and what issues and interdependencies drive regional cooperation and institutions (security challenges).⁹ This transforms the previous foundations of Asian regionalism. When regions are reconstructed, first, spatial governance structures shift to reflect new geographic interdependencies, membership, and institutions.¹⁰ Second, the purpose and form of policymaking alters as it functions at new spatial scales, follows new logics, and addresses new topics. The combination of new actors, governance mechanisms, and issues always favors certain interests over others.

Although the Indo-Pacific idea cannot be equated with the strategies and visions of individual countries, their comparison provides insight into what countries understand by the concept and for what purposes they intend to use it. The Indian Ocean and Pacific Ocean are imagined as one contiguous *maritime* area, as important sea lines of communication (SLOCs) connect the littorals of the two oceans – the majority of the world’s flows of goods traverse them.¹¹ All of the actors refer to the importance of the “rules-based order” and international norms. By contrast, differences exist among them with respect to the geographic



extent of the Indo-Pacific, the degree to which China should be contained, and the focus on or weighting of different policy fields.¹²

Several explanations exist for why the Indo-Pacific concept has gained traction in the last decade. Following a realist logic, the Indo-Pacific framework is a balancing strategy against a rising China and an attempt to hedge vis-à-vis a potentially diminishing regional role of the United States. The new framework shifts the regional focus by including India as a counterweight to China and by centering on maritime issues. A liberal approach emphasizes the growing economic, political, and strategic ties between the Indian Ocean and the Pacific Ocean. Therefore, the Indo-Pacific here can be understood as an institutional setting to further facilitate cooperation in a larger conceived region. In contrast, a constructivist lens highlights the importance of norms, identities, and values – particularly democratic values – that contribute to the emergence of the Indo-Pacific.

The Four Shifts

For more than 30 years, the Asia-Pacific has provided a widely shared geopolitical understanding regarding the fundamentals of cooperation in and with Asia. Regional integration in Asia gained momentum after the end of

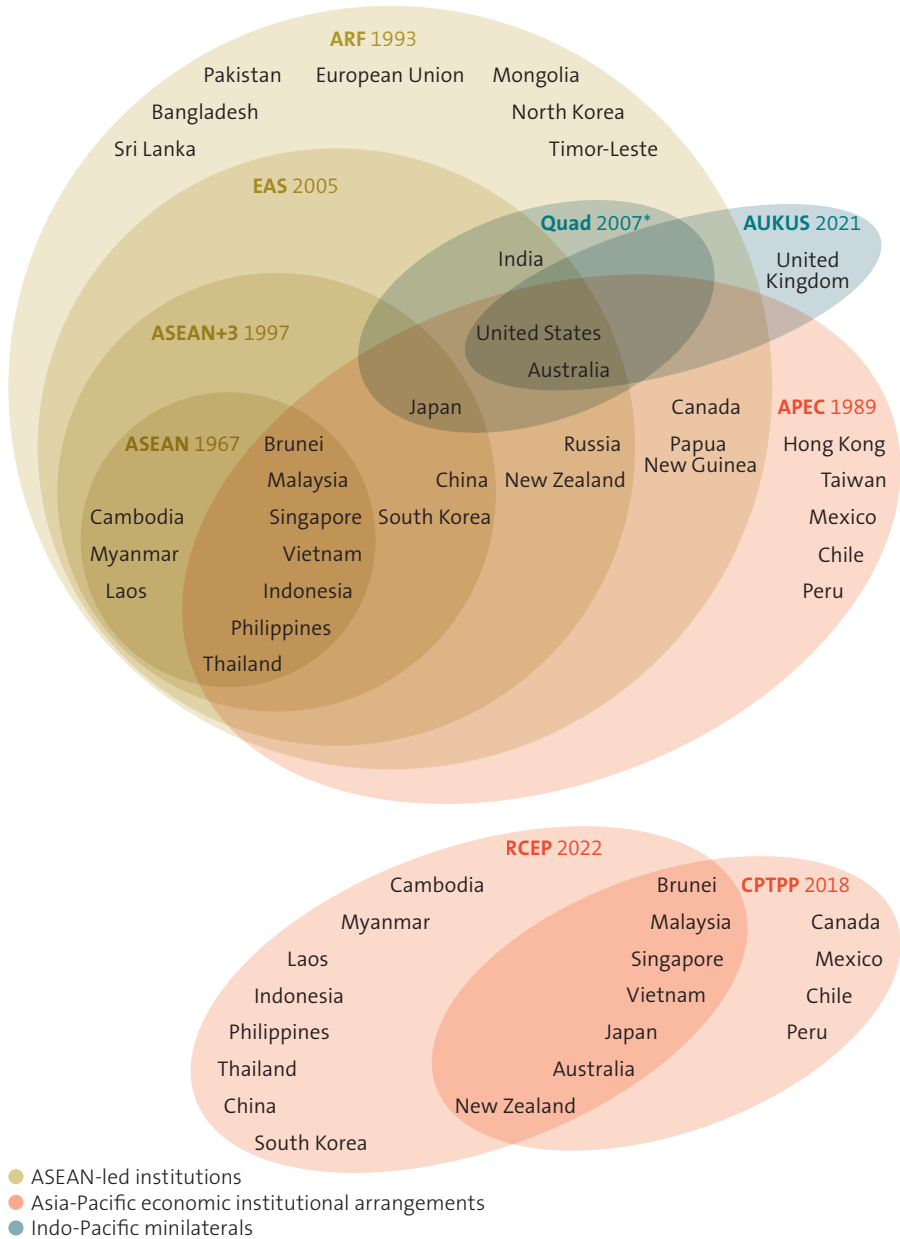
the Cold War, was driven by economic considerations, and was facilitated by the US-sponsored security system. The establishment of the Asia-Pacific Economic Cooperation (APEC) forum in 1989 signified the recognition of the Asia-Pacific as a “key symbol of political geography that defined a state’s economic and foreign policy interests.”¹³ This shared perception has also facilitated ASEAN-driven regionalism, resulting in a web of economic, political, and security ties among countries of Southeast Asia, East Asia, and the Pacific Rim. These include the ASEAN Regional Forum (ARF), the ASEAN Plus Three (APT), and the East Asia Summit (EAS) (see figure). However, for reasons discussed above, the Asia-Pacific no longer constitutes a viable frame of reference for several actors, particularly the Quad states (Australia, India, Japan, and the United States). This section discusses the four overarching trends that can be associated with the transition to the Indo-Pacific regarding the future of regionalism in Asia.

Shift 1: From the primacy of economy to the primacy of security. Economic issues have provided the basis for Asia-Pacific cooperation. The foundational objectives of APEC have been, among others, sustaining growth and development, deepening regional economic integration, and strengthening



Institutional Arrangements in Asia

Asia-Pacific Multilaterals and Indo-Pacific Minilaterals (Selection)



* The Quad was suspended from 2008 to 2017.



the multilateral trading system.¹⁴ ASEAN-led regionalism, reinforced by the creation of APEC, has resulted in a multitude of multilateral institutions with a focus on economic issues. Trade and investment liberalization has been the main contribution of ASEAN to regional cooperation.¹⁵ Certain formats, such as the ARF, also address security issues, but they have emerged in the wake of economic integration.

In contrast, security issues are placed at the core of the way proponents frame and justify both the Indo-Pacific concept and the orientation of emerging institutions. The concept's four principal advocates, Australia, India, Japan, and the United States, have conceptualized the Indo-Pacific as a maritime security region that is increasingly contested. Growing maritime interdependencies – SLOCs – are perceived as *the* critical connections between the Indian and Pacific oceans. Various traditional and non-traditional security challenges appear to threaten the openness of these important shipping routes. Such challenges include Chinese artificial island-building in the South China Sea, Chinese naval military modernization, territorial disputes, and piracy.

The Quad, the format most regularly associated with the Indo-Pacific, seeks to promote, among other things, a

free, open, rules-based order; freedom of navigation and overflight; the peaceful resolution of disputes; and the territorial integrity of states.¹⁶ Since its initiation in 2007, and particularly following its revival in 2017, the Quad has served as a mechanism for security dialogue. More recently, the Quad has expanded its scope to include a focus on coordinating efforts in infrastructural investment, vaccine diplomacy, supply chain resilience, and technology standards. It no longer wants to be perceived as merely a security format. However, the Quad continues to follow a clear “soft-balancing” logic vis-à-vis China. Trilateral dialogues and initiatives among Australia, India, Japan, and the United States are motivated by and concentrate on security. The inaugural meeting of the Australia-India-Japan high-level dialogue in 2015 centered on regional maritime security, which continues to be a key issue of the trilateral. The India-Japan-US ministerial dialogue, also launched in 2015, resulted in the inclusion of Japan in India's Malabar naval exercise.

The economic dimension of Indo-Pacific cooperation has so far remained secondary. Whether this will change with the promise by the United States to launch an “innovative new” economic framework in 2022 is an important but open question.¹⁷



To date, the United States seems to have followed an approach that treats the economy and security as distinct spheres. Further, the economic pillar of the US FOIP has been limited to modest investments, the coordination of infrastructure expenditure with other actors, and attempts to exclude China from supply chains.

This contrasts with the rationale of most countries that growing economic linkages across the Indian and Pacific oceans lie at the heart of the emergence of the new concept. However, economic ties between South Asia and the Asia-Pacific, for instance, are underdeveloped (see figure below). The Indian subcontinent is home to some of the least open economies in the world, resulting in low economic integration. Moreover, new regional trade and economic liberalization agreements – the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) – do not reflect the Indo-Pacific idea, as they exclude South Asia and the United States (see figure above).

Shift 2: From bottom-up to top-down regionalism. Japan, Australia, and to a lesser extent the United States have been the driving forces behind both the Asia-Pacific and Indo-Pacific concepts. Whereas bottom-up approaches

have been decisive in popularizing and institutionalizing the Asia-Pacific in the region, the Indo-Pacific is instead driven top-down, as its promotion and execution are spearheaded by policymakers and governments.

A widely accepted view among regionalism experts is to see the form and combination of leadership as a main explanatory factor in the emergence of regional institutions.¹⁸ Two forms of leadership can be distinguished. Executive leadership is essential in addressing operational difficulties inherent in interstate cooperation, such as collective action. It emphasizes the top-down capability of states. Ideational leadership, by contrast, is necessary to help states identify common interests and benefits from cooperation. It is a bottom-up force driven by individuals and expert communities. Depending on the combination of these two forms of leadership, different types of institutions emerge. Institutions, in turn, contribute to the recognition and acceptance of political ideas and concepts.

Asia-Pacific regionalism is an example of strong ideational and weak executive leadership, resulting in slow and thin institutionalization.¹⁹ The idea was based on a solid intellectual foundation, as it was proposed by Australian and Japanese economists



Trade Flows in the Indo-Pacific



The size of the circles represents the total trade volume in the subregions in 2019.

- Intra-regional trade
- Trade between South Asia and East Asia / Australasia
- Trade with Middle East
- Trade with Africa
- Trade with rest of the world

Sources: WITS / UN Comtrade

who shared similar visions and goals on trade, economic liberalization, and regionalism. However, it took over two decades of developing and consolidating the idea for it to start having an impact on the policy community in the 1980s.²⁰ The Japanese and Australian governments conducted “quiet diplomacy” to get regional states on

board to engage in regional economic cooperation, and refrained from officially endorsing the proposals emerging from the community.²¹ The slow process of Asia-Pacific consolidation was also related to the Soviet Union’s strong opposition to Asia-Pacific economic cooperation, which only changed after 1986.



Executive leadership was weak in promoting the Asia-Pacific framework. As they were constrained by national concerns, the United States and Japan refrained from taking on dominant roles.²² Australia attempted to fill the gap left by the absence of the other two. However, due to insufficient material power and resources, Canberra was unable to convince other member states to sacrifice some of their sovereign rights for the sake of deepening economic cooperation. As a consequence, APEC today has a non-binding and consensus-based decision-making character.

In contrast, executive leadership behind the Indo-Pacific framework has the potential to be strong but the idea is so far lacking a solid, widely shared ideational foundation. The United States would have the means necessary to take a leadership role in overcoming the operational difficulties involved in interstate cooperation in Asia. If US rhetoric were matched with political and economic resources, then Washington could significantly advance the institutionalization of the Indo-Pacific.

Up to now, ideational leadership in advancing the Indo-Pacific concept has been relatively weak. The Indo-Pacific is a “broad and loosely defined idea” that could include action on

everything from security to climate change to vaccine diplomacy.²³ There is no shared understanding of the geographic demarcation of the region covered by the term. In addition, the Quad countries promote the concept for different strategic reasons. What unites most states in the region is a shared threat perception concerning China rather than any common interests or notions of cooperation. Further, due to China’s resistance to the idea, medium-sized and smaller Asian nations approach it with caution.

As a result, state governments, particularly those in Australia and Japan, seem to be more enthusiastic about the Indo-Pacific than scholars. These governments have also been attempting to create an “Indo-Pacific identity for the region.”²⁴ Expert communities, such as in India and Australia, have long been divided about the Indo-Pacific, though the idea has been gaining traction recently.²⁵ Nevertheless, Australian economists still appear hesitant about joining the discussion about the Indo-Pacific. What follows from this combination of strong executive leadership and weak ideational leadership are loose minilateral formats, embodied, for instance, by the Quad.

Shift 3: From multilateralism to minilateralism. Security and economic cooperation in the Asia-Pacific has been



conducted primarily on a multilateral (and bilateral) basis. This is something that is reflected in the complex web of institutions in the region, which nevertheless have some degree of efficiency and coordination. These institutions also reveal the aversion in the region to anything that could threaten national sovereignty, which in part results from historical experiences with European imperialism. Further, some regional experts argue that the US development of a hub-and-spoke security architecture in the post-World War II era entrenched ideological divisions and prevented deeper integration.²⁶

Multilateral Asia-Pacific institutions are increasingly subject to question not only by the Indo-Pacific's main advocates but also by others. The "ASEAN way" has been widely criticized as "making process, not progress," especially in dealing with security issues such as the South China Sea disputes. Further, China's alleged interference through member states such as Laos and Cambodia calls into question ASEAN's neutrality and independence. The growing view among the Quad states is that minilaterals – formats that occupy the space between bilateralism and multilateralism – are "better than relying on a single fragmented regional organisation that provides little by way of options and solutions in dealing with the regional

challenges."²⁷ However, this contrasts with "ASEAN centrality," which most actors refer to in their Indo-Pacific strategies.

Under the Indo-Pacific concept, a growing body of minilateral initiatives are emerging that complement and compete with the existing regional architecture. Minilaterals are flexible and functional, and membership is deliberately limited. While all the Quad states prefer minilateralism in the area of security, Australia and Japan are open to multilateral approaches in the economic domain. This is reflected in the recent conclusion of the RCEP and CPTPP trade and economic liberalization agreements. Indo-Pacific minilaterals include, among others, the Quad; the AUKUS security partnership; India-Japan-US cooperation, which has involved ministerial-level meetings since 2015; and the Australia-India-Japan trilateral, which has been held since 2015 and produced results in the form of the Supply Chain Resilience Initiative in April 2021.

At the same time, Asia-Pacific multilateral institutions – including those that would reflect Indo-Pacific membership, such as the ARF or the EAS – are becoming increasingly marginalized. India joined the ARF in 1996 and was a founding member of the

EAS in 2005. The Australian analyst Rory Medcalf, one of the concept's leading advocates, stated that the establishment of the EAS comes "as close as anything to the moment the contemporary Indo-Pacific was born."²⁸ However, the Trump administration (2017–2021) in particular sidelined these multilaterals. It remains to be seen whether the Biden administration's efforts to reverse this trend will be successful.

Shift 4: From inclusion to exclusion of China. The current Indo-Pacific framework, as established by the Quad states, seems to exclude China. However, there are significant differences in how Australia, India, Japan, and the United States position themselves vis-à-vis Beijing. China is a member of most Asia-Pacific institutions, such as APEC, the APT, the ARF, and the EAS, but absent from existing and emerging Indo-Pacific minilaterals (see figure). This mirrors a shift from inclusive to exclusive institutional balancing. Both strategies represent a way to maintain a state's power and influence in the international system.²⁹ By including a respective state, it can be constrained by the rules and principles of the institutions. Exclusive institutional balancing, on the other hand, allows states within the institutions to act together to counter the excluded state. Until recently, it seemed unlikely

that exclusive institutional balancing would materialize in the region. This was because of India's hesitancy to formally balance against China and the lack of shared threat perceptions of China among Asian countries. This has changed significantly in recent years and especially since Sino-Indian border tensions escalated in 2020. This escalation led to clashes between the Chinese and Indian armed forces that resulted in the border dispute's first deaths in more than four decades.

From the US perspective, the "engagement policy" toward China has failed. Washington also fears that an endorsement of Chinese-led initiatives would likely increase Beijing's power and influence in regional and international affairs. The initiatives being pursued under the Indo-Pacific framework seek to provide an alternative to a possible China-centric reordering of the region and to serve as a counter-narrative to China's growing influence in Asia. The FOIP is often portrayed as the US answer to China's BRI. It also provides a strategic rationale for extending Washington's strategic cooperation beyond its hub-and-spoke system.³⁰ The emergence of the Indo-Pacific concept likewise reflects the anxieties about a shifting regional balance of power in Australia and Japan, where the idea originated. In Australia's case, this threat perception



has intensified significantly with China's aggressive response to Canberra's call for an independent investigation into the origin of COVID-19 in 2020.

New Parameters for Cooperation and Conflict

The Indo-Pacific framework is both a consequence and a driver of great-power competition. Whereas the Asia-Pacific framework rose during the US post-Cold War "unilateral moment," when interstate relations were largely characterized by economic cooperation, the Indo-Pacific construct reflects the current era, marked by increased confrontation between the United States and the rising global superpower, China. US and regional partners' initiatives under the Indo-Pacific concept seek to change what they perceive as the deficiencies of the current regional architecture. At the same time, the emerging Indo-Pacific construct pushes other countries in the region to position themselves in the US-China strategic competition. This section analyzes the strategic opportunities and challenges that the policy-driven shifts under the construct create for Asian states and extra-regional actors.

From the perspective of the United States and its regional partners, the transition from a focus on economic to security issues (shift 1), and particularly to maritime security, highlights

a dimension in which the United States is still dominant and holds a comparative advantage over China. In the economic realm, the US ability to shape the regional order has markedly declined due to growing domestic opposition to free trade and China's increasingly strong economic position in the region. The focus on maritime security provides the United States with new opportunities, such as the potential to strengthen engagement with the Indian Ocean region – an area in which it previously lacked the strategic ties to possess regional order-shaping capabilities. For India itself, the maritime turn is rather new, as the country traditionally had a continental security focus. In the cases of Australia and Japan, the emphasis on maritime security aligns well with their self-identification as maritime states. In addition, the framework may affect the balance of power within Southeast Asia in Washington's interest by tipping it in favor of maritime states, such as Indonesia and Singapore, and away from continental states, such as Cambodia and Laos, that are more tightly bound in Beijing's orbit.

Among Asian states, a widespread concern exists over the prospect of an increasingly polarized order, to which a security-driven regionalism may contribute. The Indo-Pacific



framework expands the geographic scope of the Asian region, but the re-focusing on security issues that comes with it narrows the themes and dimensions of interaction among countries. Without an economic pillar and a more explicit multi-dimensional approach, the Indo-Pacific framework risks pushing countries of the region to choose between security and other interests. In particular, the economic interests of South Korea and many of the Southeast Asian states could be adversely affected, as their economies are increasingly centered around China's. These countries thus want to avoid tensions in their relations with Beijing. At the same time, they see long-term partnership with the United States as an important counterweight to China's growing dominance in Asia.

The Indo-Pacific concept is unifying actors worldwide that share a strategic concern over Chinese actions. However, so far it does not – unlike Asia-Pacific regionalism – build on a broadly shared interest in deeper integration within the region (shift 2). Regional cooperation under the framework has an ad hoc character. Consequently, the success of the framework will depend on the sustained commitment of its proponents. For it to expand and deepen further, the framework would need to go beyond addressing the selective interests of its proponents,

which include the strengthening of their own positions in the region, and to broaden out to resonate better with the views of other regional actors.

The rise of the Indo-Pacific concept is also related to growing ambitions for regional leadership by Australia, Japan, and India. Stronger strategic cooperation among the three countries, as well as with extra-regional actors, will help them hedge against weakening US leadership in the region. At the same time, the Indo-Pacific framework keeps the United States engaged. Australia and Japan, which are US military allies, continue to depend for their security on Washington. Indeed, 55,000 US soldiers are stationed in Japan alone. However, in contrast to Australia, for example, some Southeast Asian states do not see the United States as a moral and benign actor per se. Instead, they see it as an actor that, like China, may destabilize the regional order through its confrontational behavior.³¹ Illustrative examples of such relatively skeptical positions among Southeast Asian states include their reactions to the announcement of AUKUS in September 2021. Indonesia, for example, an early adopter of the Indo-Pacific terminology, expressed a deep concern over the arms race and rise in conflict in the region following the announcement.



The rise of minilaterals (shift 3), such as the Quad or AUKUS, reflects and adds to the growing complexity and burden-sharing in Asia's security order today. The Asia-Pacific could build on the US bilateral alliance system of the post-World War II era.³² This hub-and-spoke security network clearly defined the hierarchy and relations among states and, motivated by Washington's preference, contributed to the marked security bilateralism observable in the region. The current Indo-Pacific construct, by contrast, is led by several countries, including India, with which the United States does not maintain a military alliance. Within this framework, numerous actors with varying and sometimes competing ambitions, interests, and ideas are trying to shape the regional order. From a US perspective, minilateral cooperation formats provide opportunities to engage with its regional treaty allies as well as with old and new partners that are willing and able to cooperate in specific issue areas.

The flexible, non-institutional character of minilateral cooperation formats constitutes, at the same time, a limitation on cooperation within the Quad context. In contrast to Australia or Japan, India does not have strongly developed military and institutional ties with the United States. This provides Washington with a reduced degree of

leverage over Delhi's foreign and security policies. The extent and depth of Quad cooperation, therefore, critically depends on the willingness of India. As a result, the Quad has settled into focusing on non-traditional security issues, including cooperation in the fields of technology, climate change, and pandemic response. India's case also illustrates how minilaterals, or more specifically their mutually non-exclusive character, can help states keep options open in terms of partnerships. In late 2021, India took part in the Russia-India-China (RIC) trilateral cooperation meeting, which aimed at strengthening cooperation among the three participants.

Reservations exist especially among small- and medium-sized Asian states that the Indo-Pacific framework may have an undermining effect on multilateralism in the region and, more specifically, erode the coherence and influence of ASEAN.³³ Southeast Asian states are committed to ASEAN centrality and value the agency that the platform provides them in regional matters. However, among the Indo-Pacific's main proponents, only Australia and Japan favor multilateral solutions in the economic sphere, with India and the United States preferring bilateral solutions. In the sphere of security, all of the Quad states prefer minilaterals.³⁴ "Quad



Plus” cooperation arrangements – such as those started with New Zealand, South Korea, and Vietnam in 2020 to coordinate COVID-19 approaches – also have a minilateral nature.

On the positive side, minilateral cooperation arrangements may help overcome strained bilateral ties among Asian states. A case in point is the Five Power Defence Arrangements, a consultative defense mechanism through which Malaysia and Singapore cooperate in partnership with Australia, New Zealand, and the UK. More generally, minilateral formats may introduce new dynamism in policy fields where regional cooperation was previously blocked or moving slowly.

The Indo-Pacific concept is still evolving, but as of today, US-led regional cooperation under the framework excludes China (shift 4). The framework is not about overcoming divisions among Asian sub-regions. In fact, its new institutional features, such as minilaterals, could possibly accelerate the fracturing tendencies of an already divided Asia. In addition, competitive politics could make compromise and reconciliation even more difficult.³⁵ More inclusive perspectives on the Indo-Pacific include those promoted by ASEAN or the EU. However, these are not currently dominant. In US and Japanese interpretations of

the Indo-Pacific, countering a China-centric view of the Asian order is a particularly prominent feature. India is also supportive of this purpose, even though it promotes a more multipolar view of the region and, like other countries, sees the Indo-Pacific as more of a geographic condition.³⁶

The United States has declared the Indo-Pacific to be the central geographic arena in its strategic competition with China.³⁷ Hence, it wants to secure its dominant position in the region. A defining feature of Asia’s regional order today is the coexistence of multiple and (at times) inconsistent orders, which reflects the changing balance of power. In this context, states are aiming at defining a new order, but no agreement exists as to what kind of order or which rules should apply. Illustrative of this is the rejection by Asian and European states of China’s claims in the South China Sea. They see these claims as inconsistent with the United Nations Convention on the Law of the Sea (UNCLOS) – a position that was supported by a 2016 international court ruling. In interactions among actors in Asia today, elements of cooperation and compliance with existing norms and processes exist side-by-side with elements of contestation. Hence, it is difficult on a conceptual basis to distinguish between status quo and revisionist



positions.³⁸ What role could or should Europe play in such a context?

What Place for Europe?

European states' interest in the Indo-Pacific framework reflects a growing awareness of cross-regional strategic interdependencies and the global relevance of the rules and processes that are being renegotiated under the concept.³⁹ At the same time, it is also a response to the Quad states' initiatives, including US pressure on European states to engage more. The first time the Indo-Pacific terminology was used in an official EU document was in the EU-Japan Connectivity Partnership of September 2019. The most proactive EU member states are France, Germany, and the Netherlands. They are pursuing a coordinated European engagement with the Indo-Pacific, one which will involve the EU playing an enhancing and coordinating role. However, except for the area of trade policy, where it has far-reaching exclusive competence, the EU will have to rely on coalitions of the willing and capable among its member states for concrete action.

With its overseas territories that are home to 1.5 million French citizens and 8,000 soldiers, France is the only European "resident power" in the region, and it was the first to champion the idea of an Indo-Pacific framework. The post-Brexit UK has also shown

new ambitions to step up its strategic engagement in the region, aiming to become the "European partner with the broadest and most integrated presence."⁴⁰ However, Indo-Pacific issues are no longer seen as being first and foremost about French and UK naval presence in the South China Sea, as other European actors have started developing their own strategic approaches toward the Indo-Pacific, including Germany and the Netherlands in 2020.⁴¹ France, Germany, and the Netherlands were also the main drivers of the process that led to the fast adoption of the EU Indo-Pacific strategy in 2021.

In many ways, the overarching shifts in Asian regionalism described in previous sections, including the shift away from an economic to a security focus (shift 1), create obstacles to Europe's traditional engagement with Asia. The EU is a major trading power. Hence, it has a strong focus on economic issues and opportunities in the region. China is today the most important trading partner of the EU and its leading economy, Germany. However, with ongoing geopolitical shifts, new vulnerabilities are emerging in Europe, and a growing consciousness exists that economic prosperity depends on political developments in Asia. This awareness was reinforced during the COVID-19 pandemic in

2020 and 2021. Examples of this include the risk of disruptions in trade and supply chains or negative impacts resulting from excessive economic or technological dependence – all of which are also components and consequences of intensifying US-China strategic competition.

In the security and defense domain, the EU's ability to act is limited, with military capabilities and political decision-making power resting with individual EU member states. Hence, security and defense goals outlined in the EU Indo-Pacific strategy are focused on the promotion of an “open and rules-based” regional security architecture. Related activities listed under this goal include the securing of SLOCs, capacity building, and enhanced naval presence in the Indo-Pacific. Individual countries, including not only Europe's leading naval powers France and the UK but also Germany, want to increase their naval presence. For example, over the past several months, each of these countries have sent warships to the Indian Ocean and the South China Sea. However, even for Paris and London, the high costs related to such an increased military presence are a constraining factor.

Shifts toward top-down regionalism and minilateralism (shifts 2 and 3) go against traditional European priorities

and forms of engagement in the region. Promoting effective multilateralism has been the “logical and consistent basis of the EU's foreign policy agenda for the past two decades.”⁴² In Asia, ASEAN, which epitomizes bottom-up multilateral Asian regionalism, has been the EU's key regional partner and will remain a central reference point for its future engagement in the region (ASEAN centrality). EU-ASEAN relations were upgraded to a strategic partnership in December 2020 during a meeting of foreign ministers between the two unions. However, with their engagement under the Indo-Pacific framework, European actors also recognize that a narrow focus on established ASEAN-centered institutions may not sufficiently acknowledge the changing geopolitical landscape in the region, including India's increased role beyond the South Asian region. The challenge consists of finding new ways of engagement that can accommodate the still evolving and unconsolidated nature of Indo-Pacific regionalism, as well as its potentially divisive effects.

From a broader European perspective, the turning points that allowed for a more active engagement with the Indo-Pacific concept came in 2019 and 2020.⁴³ Previously, strictly exclusionary interpretations of the Indo-Pacific (shift 4) curtailed early European



enthusiasm for embracing the concept. A majority of Chinese analysts still see the Indo-Pacific framework as something that seriously harms Chinese interests, with only a minority believing that China should participate in it.⁴⁴ In June 2019, ASEAN adopted its Outlook on the Indo-Pacific, which promotes an open, inclusive model of the region. Through a reference to this paper, China officially acknowledged the Indo-Pacific concept for the first time in November 2021.⁴⁵ For Germany and the Netherlands, and later the EU, the ASEAN Outlook was instrumental in that it demonstrated how to engage with the Indo-Pacific framework without adopting a politicized or confrontational approach.⁴⁶ The EU Indo-Pacific strategy is explicit in that it is “inclusive of all partners in the region.”⁴⁷ However, new complications and challenges are being created for the EU’s inclusive approach by subsequent and more emphatic examples of US-led pushback against China’s assertive behavior, including the formation of AUKUS.

Importantly, the shifts described here also create new opportunities for European actors. The rise in minilateral cooperative arrangements in the region offers new entry points for engagement in Asia in terms of partnerships and issue areas. Such arrangements are potentially more open to the inclusion

of Europeans than previous arrangements built around the bilateral US alliance system or ASEAN multilateralism, which are typically reserved for Asia-Pacific states.⁴⁸ Most minilateral mechanisms as they emerge in the Indo-Pacific are focused on non-traditional security issues. According to its strategy, the EU intends to strengthen cooperation in priority areas, such as human security, including pandemic preparedness; ocean governance, which covers the fight against illegal, unreported, and unregulated fishing; and cyber security. The EU has also shown an openness in enhancing issue-specific cooperation with minilateral groupings, such as with the Quad in the areas of climate change, technology and vaccines. However, the EU also wants to deepen bilateral partnerships in the region.⁴⁹

Particularly in the economic and regulatory domains, intensifying geopolitical competition may open a door for stronger European engagement in Asia. The EU and its member states are leading direct investors and development cooperation partners both in Asia and globally. Building on this role, the EU will seek to step up its connectivity activities, which it outlined in its EU-Asia Connectivity Strategy of 2018 and reaffirmed in its Global Gateway strategy of 2021.⁵⁰ Like the United States and Japan, the



EU sees infrastructure development financing, including in digitalization, technology, and climate change, as a key area for supporting states in the region in light of China's fast-growing regional influence. The EU will also continue and reinforce its promotion of free trade with Asia, an area in which the United States is facing growing constraints due to domestic opposition. Indeed, over the past decade, the EU has concluded bilateral trade agreements with South Korea, Japan, Singapore, and Vietnam. It has also started negotiations with several other countries in the region.

For an EU-wide approach toward the Indo-Pacific to be sustainable and impactful, it will have to successfully operationalize and implement its strategies and concepts. This will also require the EU to streamline activities, including the use of existing dialogues and platforms. Indeed, experience shows that strategies concerning the Indo-Pacific framework do not always align with real actions taken. France, having been at the forefront of promoting engagement with the framework, has set ambitious goals for its six-month presidency of the Council of the European Union, which continues until the end of June 2022. Together with the High Representative of the Union for Foreign Affairs and Security Policy, France jointly hosted a ministerial forum in February

2022. At this forum, EU member states, the European Commission, and around 30 Indo-Pacific partner countries, including India, Indonesia, and Japan, addressed the implementation of the EU Indo-Pacific Strategy and the Global Gateway initiative. When discussing potential areas for strengthening European cooperation and concrete projects for implementation, the participants highlighted areas such as coordinated maritime presence and vaccine cooperation.⁵¹

In the pursuit of their Indo-Pacific policies, European actors will need to balance their own interests and resources – which are affected by other pressing policy issues in their neighborhood – with the expectations and demands of all regional partners, for which they want to be credible and responsible partners. Regional views differ on the desirable extent and nature of European engagement, such as on how strongly Europeans should promote multilateralism in the region. Another major challenge involves coordination among European states, given their varying capabilities, interests, and vulnerabilities. As a state with a presence in the region that is focusing on maritime security challenges, France has positioned itself more clearly within US-China strategic competition and has sought closer ties with Australia, India, and



Japan. For example, the French navy recently participated in joint naval exercises with Quad states. Germany is pursuing a broader approach, something which is reflective of a position shared by many other European countries. Nevertheless, the proactive positioning by some European governments has not yet resulted in broader policy debates or increased interest in the topic among voters.⁵²

A Region in Flux

Asia's geopolitical landscape is undergoing fast and fundamental changes, and the global heavyweights China and the United States are competing over leadership and influence in the region. As a result, the positioning of actors in and toward Asia is highly dynamic. States and organizations are rapidly issuing new strategies on Asia in which they are defining and redefining their interests and launching new initiatives and cooperation formats. The emergence of the Indo-Pacific as a frame of reference needs to be understood in this highly dynamic context. The goal of this chapter has been to analyze the strategic implications of the emerging framework by highlighting the shifts that are occurring as it slowly supplants the previously dominant construct of the Asia-Pacific. The framework is bringing about a form of regionalism that is security- rather than economy-driven, top-down rather than bottom-up,

minilateral- rather than multilateral-oriented, and exclusionary rather than inclusive. With these shifts arise new opportunities and challenges for regional and extra-regional actors.

Analysts today agree that the Indo-Pacific framework is here to stay and that it is likely to gain relevance. This is due to China's rise and the perception held by the concept's proponents that it is an effective and adjustable policy framework. Like all regional projects, the Indo-Pacific is based on "mental maps" that reflect actors' politically and ideologically anchored visions for the region. In contrast to the idea of the Asia-Pacific, the Indo-Pacific concept has the strength of being able to reflect new strategic realities, including India's rising political and economic relevance for the region. The Indo-Pacific concept also acknowledges the increased interconnectedness between the Indian Ocean and the Asia-Pacific – a reality also mirrored by the China-led BRI.

At the same time, the framework will continue to suffer from an inherent fragility, which is related to its lack of broader integrative power and unanswered questions concerning leadership and legitimacy. Even the main advocates of the concept differ in their views about what constitutes the region and what their priorities



should be. Actors such as ASEAN and India promote inclusiveness and transparency as features of Indo-Pacific regionalism. Japan has also reformulated its approach so that it is less focused on competition than before. This was prompted by Southeast Asian and Chinese reactions to Japan's initial perception of the concept. However, US-led activities related to the Indo-Pacific have generally had a confrontational, zero-sum character, even if the US 2022 Indo-Pacific strategy document also suggests a shift toward a more differentiated view. Other Asian states fear that the concept increases competition and makes decision-making practices increasingly opaque. They are thus concerned that it will undermine the region's compromise-seeking efforts and, eventually, peace and stability.

For its institutionalization, the Indo-Pacific framework will depend on the active support of its main advocates, Australia, India, Japan, and the United States. The extent and breadth of cooperation within the framework will be determined by the success of the cooperation formats these states establish with other regional and extra-regional states. These formats include those in the area of security, such as the Quad (Plus), and beyond. To gain more widespread acceptance, including among small- and medium-sized Asian states, the proponents

of the Indo-Pacific will have to address concerns regarding the potentially polarizing effect of the concept. However, as a reactive, developing concept, China's behavior and positioning will also be decisive in the coming years. For instance, India's interest in deepening ties with Australia, Japan, and the United States will increase with the threat posed by China, both on land and at sea.

Asian states, especially the relatively large and regionally ambitious ones, have started to rely on minilateral cooperation formats. This has come about through their search for a well-functioning and responsive institutional architecture that can address the multiple and potentially destabilizing challenges facing their region according to their interests and priorities. Indeed, the growing array of traditional and non-traditional security threats has exposed the limits of existing bilateral alliances and multilateral institutions. Most likely, the future architecture in Asia will consist of a mix of increasingly less important Asia-Pacific multilateral institutions; Indo-Pacific minilaterals such as the Quad; traditional bilateral military alliances that constitute the US hub-and-spoke system; and Chinese initiatives, which include, among others, the BRI, the Asia Infrastructure Investment Bank (AIIB), and the



RCEP. The elements that form this mix may end up both complementing and competing with each other.⁵³ As the complexity of the regional architecture grows, there is a risk that it will become an even greater challenge to establish effective coordination and consensus-building.

Asian states' security relations are complex, and their interests are varied. In this setting, Europeans face the challenge of finding their own voice. The shifts that accompany the adoption of the Indo-Pacific framework create obstacles for European engagement with the region. This is because these shifts contrast with the EU's main strength as a trading partner and its institutional functioning as an inclusive multilateral institution. Given that it has few competencies when it comes to hard security questions, the EU can hardly be expected to play a meaningful traditional security role in the Indo-Pacific. At the same time, its economic engagement with the region is strong and set to increase. Its normative strength, the clout of its internal market, and its related regulatory powers enable the EU to exert its influence in the region in cooperation with Asian states. These attributes provide the EU with the ability to engage through well-established and new instruments, such as free trade promotion and infrastructure financing.

Finally, in the development of the Indo-Pacific concept in recent years, there has often been a gap between ambitions and ideas about the concept and real actions taken. In practice, any concrete action taken within the Indo-Pacific framework runs the risk of supporting a US position in the broader geopolitical competition with China. An example of this is provided by the 2021–2022 mission of a German warship. It aimed to highlight a shared concern among Indo-Pacific proponents, the importance of safeguarding the rules-based international order. However, the warship's route took it to the US base at Diego Garcia in the Indian Ocean, which is contested under international law.⁵⁴ Inconsistencies between rhetoric and actions will undermine Europe's credibility and its normative power – prerequisites for shaping the development of the Indo-Pacific.

- 1 Australian Government, *Australia in the Asian Century: White Paper* (Canberra: Australian Government, 2012), 74.
- 2 Rory Medcalf, "In Defence of the Indo-Pacific: Australia's New Strategic Map," *Australian Journal of International Affairs* 68:4 (2014), 472.
- 3 Andrew Phillips, *From Hollywood to Bollywood? Recasting Australia's Indo-Pacific Strategic Geography* (Barton: Australian Strategic Policy Institute, 2016), 15.
- 4 Wang Yi, Foreign Minister Wang Yi Meets the Press, Beijing, 08.03.2018.



- 5 Troy Lee-Brown, "Asia's Security Triangles: Maritime Minilateralism in the Indo-Pacific," *East Asia* 35:2 (2018), 164.
- 6 Thomas Wilkins / Jiye Kim, "Adoption, Accommodation or Opposition? Regional Powers Respond to American-led Indo-Pacific Strategy," *The Pacific Review* (2020).
- 7 Shinzo Abe, "Confluence of the Two Seas." Speech at the Parliament of the Republic of India, 22.08.2007.
- 8 Donald Trump, Remarks by President Trump at APEC CEO Summit, Da Nang, 11.11.2017.
- 9 Jeffrey D. Wilson, "Rescaling to the Indo-Pacific: From Economic to Security-driven Regionalism in Asia," *East Asia* 35:2 (2018), 181–82.
- 10 See Ibid, 180.
- 11 Felix Heiduk / Gudrun Wacker, "From Asia-Pacific to Indo-Pacific," *German Institute for International and Security Affairs*, 01.07.2020, 7.
- 12 Ibid, 6.
- 13 Kai He / Huiyun Feng, "The Institutionalization of the Indo-Pacific: Problems and Prospects," *International Affairs* 96:1 (2020), 158.
- 14 Asia-Pacific Economic Cooperation, "Seoul APEC Declaration," apec.org, 1991.
- 15 Wilson, "Rescaling to the Indo-Pacific," 181.
- 16 The White House, "Joint Statement from Quad Leaders," whitehouse.gov, 24.09.2021.
- 17 The White House, *Indo-Pacific Strategy of the United States*, 11.02.2022, 11.
- 18 See He / Feng, The Institutionalization of the Indo-Pacific, for the "leadership-institution" model.
- 19 Ibid, 149–168.
- 20 Ibid, 162.
- 21 Ibid, 163.
- 22 Ibid, 164.
- 23 Ibid, 162.
- 24 Ibid, 164.
- 25 We thank Bec Strating, Director of La Trobe Asia, for her valuable insights into the Australian Indo-Pacific debate.
- 26 Mark Beeson, "Rethinking Regionalism: Europe and East Asia in Comparative Historical Perspective," *Journal of European Public Policy* 12:6 (2005), 969–985.
- 27 Rajeswari Pillai Rajagopalan, "Explaining the Rise of Minilaterals in the Indo-Pacific," *Observer Research Foundation*, 16.09.2021, 4.
- 28 Rory Medcalf, "The Indo-Pacific: What's in a Name?" *The American Interest*, 10.10.2013.
- 29 Kai He, *Institutional Balancing in the Asia Pacific: Economic Interdependence and China's Rise* (London: Routledge, 2008); Kai He, "The Balance of Infrastructure in the Indo-Pacific: BRI, Institutional Balancing, and Quad's Policy Choices," *Global Policy* 12:4 (2021), 545–552.
- 30 Kai He, "Three Faces of the Indo-Pacific: Understanding the 'Indo-Pacific' from an IR Theory Perspective," *East Asia* 35:2 (2018), 152.
- 31 Susannah Patton, "Australia Must Take Southeast Asian Reactions to AUKUS Seriously," *The Strategist*, 22.09.2021.
- 32 Bibek Chand / Zenel Garcia, "Constituting the Indo-Pacific: Securitisation and the Processes of Region-Making," *International Quarterly for Asian Studies* 52:1–2 (2021), 15–34.
- 33 Sarah Teo, "Could Minilateralism Be Multilateralism's Best Hope in the Asia Pacific?" *The Diplomat*, 15.12.2018.
- 34 Heiduk/Wacker, "From Asia-Pacific to Indo-Pacific," 30.
- 35 Rajagopalan, "Explaining the Rise of Minilaterals in the Indo-Pacific," 12.
- 36 Brendan Taylor, "Is Australia's Indo-Pacific Strategy an Illusion?" *International Affairs* 96:1 (2020), 95–6.
- 37 The White House, *Indo-Pacific Strategy*.



- 38 Alastair Iain Johnston, "China in a World of Orders: Rethinking Compliance and Challenge in Beijing's International Relations," *International Security* 44:2 (2019), 58.
- 39 Gudrun Wacker, "European Approaches to the Indo-Pacific: Same, Same, but Different," in: Christian Echle / Jan Kliem (eds.), *European Strategic Approaches to the Indo-Pacific* (Singapore: Konrad-Adenauer-Stiftung, 2022), 7.
- 40 The UK Government, *Global Britain in a Competitive Age: The Integrated Review of Security, Defence, Development and Foreign Policy*, 16.03.2021.
- 41 Mathieu Duchâtel / Garima Mohan, "Franco-German Divergences in the Indo-Pacific: The Risk of Strategic Dilution," *Institut Montaigne*, 30.10.2020.
- 42 Elena Atanassova-Cornelis / Eva Pejsova, "Minilateralism: An Opportunity for the EU's Engagement in the Indo-Pacific," *Centre for Security, Diplomacy and Strategy*, 26.11.2021, 5.
- 43 Maaïke Okano-Heijmans, "Towards Meaningful Action: The Netherlands and the EU Turn to the Indo-Pacific," *Institute of South Asian Studies, ISAS Insights* 10.07.2021.
- 44 Mingjiang Li, "China's Evolving Asia-Pacific Policy: From Asserting Chinese Interests to Coping with the Indo-Pacific Challenge," in: Robert G. Patman / Patrick Köllner / Balazs Kiglics (eds.), *From Asia-Pacific to Indo-Pacific: Diplomacy in a Contested Region* (Singapore: Palgrave Macmillan, 2022), 91–114.
- 45 Xi Jinping, *For a Shared Future and Our Common Home*, Speech at the Special Summit to Commemorate the 30th Anniversary of China-ASEAN Dialogue Relations, en.qsttheory.cn, 22.11.2021.
- 46 Okano-Heijmans, *Towards Meaningful Action*.
- 47 Council of the European Union, "Council Conclusions on an EU Strategy for Cooperation in the Indo-Pacific," 16.04.2021.
- 48 Atanassova-Cornelis/Pejsova, *Minilateralism*, 1.
- 49 European Union External Action Service Press Team, "Joint Communication to the European Parliament and the Council: The EU Strategy for Cooperation in the Indo-Pacific," *European Commission*, 16.09.2021.
- 50 Simone Tagliapietra, "The Global Gateway: A Real Step towards a Stronger Europe in the World?" *Bruegel Blog*, 07.12.2021.
- 51 French Presidency of the Council of the European Union, "Forum for Cooperation in the Indopacific", *presidence-francaise.consilium.europa.eu*, 22.02.2022.
- 52 For a cross-country comparison, see Garima Mohan, "A European Approach to the Indo-Pacific?" *Global Public Policy Institute*, 2019.
- 53 Christian Wagner, "Deutschland im Indo-Pazifik," *WeltTrends: Das außenpolitische Journal* 181 (2021), 41–44.
- 54 Felix Heiduk, "A Delicate Mission: The Frigate Bayern, the Rules-Based International Order and the Status of Diego Garcia," *German Institute for International and Security Affairs*, 24.08.2021.

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